
Gorniška oprema – Naprave za spuščanje - Varnostne zahteve in preskusne metode

Mountaineering equipment - Descenders - Safety requirements and test methods

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Mountaineering equipment - Descenders - Safety requirements and test methods

Bergsteigerausrüstung - Abseilgeräte -
Sicherheitstechnische Anforderungen und Prüfverfahren

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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
EUROPÄISCHES KOMITEE FÜR NORMUNG

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Contents

Page

Foreword.....	3
1 Scope	4
2 Normative references	4
3 Terms and definitions	4
4 Safety requirements	4
4.1 Design	4
4.2 Braking capacity	5
4.3 Strength	5
4.3.1 Descenders.....	5
5 Test methods.....	5
5.1 Conditioning.....	5
5.2 Examination of design	5
5.3 Determination of the braking capacity	5
5.3.1 Apparatus	5
5.3.2 Procedure	6
5.4 Determination of strength.....	7
5.4.1 Test of the attachment opening	7
5.4.2 Test of the braking part.....	7
6 Information to be supplied.....	7
7 Marking	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, prEN.15151:2005.....	10

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Foreword

This document (prEN 15151:2005) has been prepared by 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 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.

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

Annex A is informative.

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1 Scope

This standard specifies safety requirements and test methods for descenders used for mountaineering and 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 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.*

EN 12275, *Mountaineering equipment — Connectors — Safety requirements and test methods.*

3 Terms and definitions

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

3.1 descender for mountaineering
a mechanical device which attached to a person and placed on the rope allows the braking of the person during descending

3.2 braking capacity
the ratio between the tensions of the rope on both sides of the descender

3.3 attachment opening
any system which allows the attachment of a connector (in accordance with EN 12275)

4 Safety requirements

4.1 Design

4.1.1 Descenders shall have an attachment opening of at least 13 mm. The edges of all openings shall be at least as in Figure 1.

Dimensions in millimetres

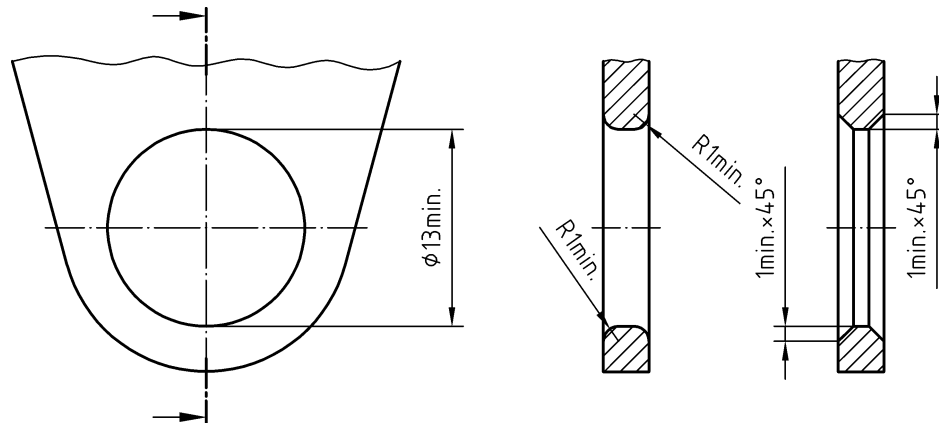


Figure 1 — Edges of openings

4.1.2 All edges of descenders which can come into contact with the user's fingers shall be free of burrs.

4.2 Braking capacity

4.2.1 When tested according to 5.3.2, the force multiplier k shall be more than 7.

4.3 Strength

4.3.1 Descenders

4.3.1.1 When tested according to 5.4.1 with a rope of minimum diameter as marked on the descender, the descender shall not break.

4.3.1.2 When tested according to 5.4.2 with a rope of minimum diameter as marked on the descender, passing through the descender shall show no visible sign of damage or deformation which can impair its function.

5 Test methods

5.1 Conditioning

Carry out the tests at a temperature of $(23 \pm 5) ^\circ\text{C}$.

5.2 Examination of design

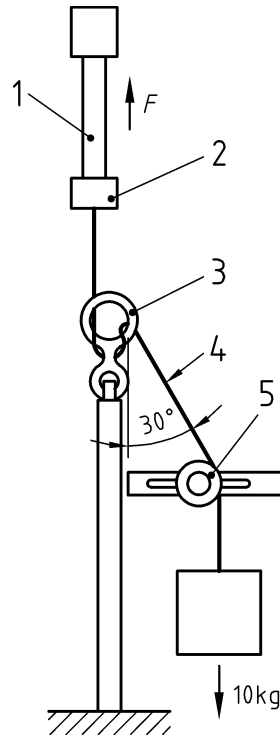
5.2.1 Determine the dimension of the attachment opening (see 4.1.1) by measuring with a bar of $(13 + 0,1)$ mm diameter.

5.2.2 Test by tactile examination that the edges of the descender are free from burrs.

5.3 Determination of the braking capacity

5.3.1 Apparatus

The descender is placed in a test apparatus as described in Figure 2.



- Key**
- 1 Hydraulic jack
 - 2 Cell
 - 3 Test device
 - 4 Rope
 - 5 Pulley

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Figure 2 — Apparatus for determination of the braking capacity

5.3.2 Procedure

The rope's direction between the entrance and the way out of the descender shall be: $(30 \pm 5)^\circ$.

The speed of the jack shall be in the range of $(1\ 000 \pm 300)$ mm/min.

The rope (according to EN 892 or EN 1891) shall have a knotability K of $0,6 < K < 0,8$.

The applied mass shall be $(10 \pm 0,1)$ kg.

The device has to be tested according to the manufacturer's instructions and with a rope of the minimum diameter marked on the device (and/or with two strands of rope of the minimum diameter marked on the device).

The recorded value shall be the maximum force F recorded at least 5 s after the start of the test. The force multiplier k shall be calculated according to the formula:

$$k = F(N)/98,1(N)$$

5.4 Determination of strength

5.4.1 Test of the attachment opening

The device is placed as in Figure 3: the rope is placed as described in the manufacturer's instructions and then the two extremities of the rope is attached on the same anchor. A force of $(12 \pm 0,1)$ kN is applied to the opening via a pin of $(10 \pm 0,1)$ mm of diameter.



Figure 3 — Arrangement for testing the attachment opening

5.4.2 Test of the braking part

The device is placed as in Figure 4: the rope is placed as described in the manufacturer's instructions. One extremity is fixed to an anchor, a force of $(5 \pm 0,1)$ kN is applied.

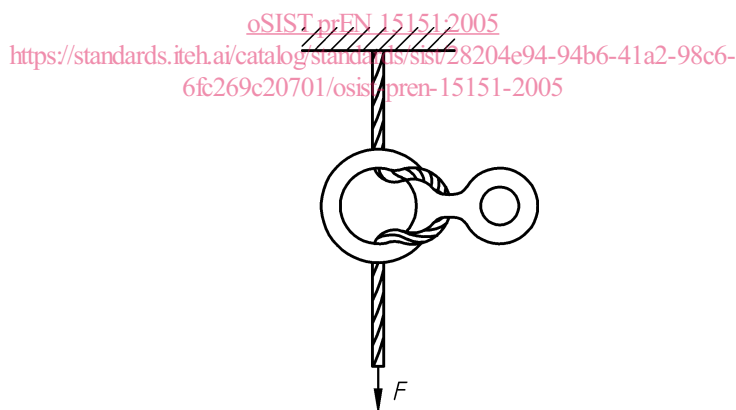


Figure 4 — Arrangement for testing the braking part

6 Information to be supplied

- the name or trademark of the manufacturer, importer or supplier;
- the number of this European Standard: EN 00136079;
- the meaning of any markings on the product;
- the use of the product;
- how to maintain and service the product;

- f) the lifespan of the product.

7 Marking

Descenders shall be marked with at least the following information:

- g) the name or trademark of the manufacturer, importer or supplier
- h) the minimum rope diameter, in millimetres, with which the device can be used. The symbol \emptyset shall be used as a prefix to indicate the minimum diameter, e.g. min. 1x \emptyset 10,5, min. 2x \emptyset 8,5.

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