
Gorniška oprema – Sistemi za absorpcijo energije pri zahtevnem varovanem planinstvu (via ferrata) – Varnostne zahteve in preskusne metode

Mountaineering equipment - Energy absorbing systems for use in klettersteig (via ferrata) climbing - Safety requirements and test methods

Bergsteigerausrüstung - Fangstoßdämpfer für die Verwendung auf Klettersteigen - Sicherheitstechnische Anforderungen und Prüfverfahren

Équipement d'alpinisme et d'escalade - Absorbeur d'énergie utilisé en Via Ferrata - Exigences de sécurité et méthodes d'essai

Ta slovenski standard je istoveten z: EN 958:2006

ICS:

97.220.40	Oprema za športe na prostem in vodne športe	Outdoor and water sports equipment
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English Version

Mountaineering equipment - Energy absorbing systems for use
in klettersteig (via ferrata) climbing - Safety requirements and
test methods

Équipement d'alpinisme et d'escalade - Absorbeur
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Verwendung auf Klettersteigen - Sicherheitstechnische
Anforderungen und Prüfverfahren

This European Standard was approved by CEN on 25 October 2006.

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 Central Secretariat or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Central Secretariat has the same status as the official versions.

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Foreword

This document (EN 958:2006) has been prepared by Technical Committee CEN/TC 136 “Sports, playground and other recreational 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of an identical text or by endorsement, at the latest by June 2007, and conflicting national standards shall be withdrawn at the latest by June 2007.

This document supersedes EN 958:1996.

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.

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

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Introduction

The text of this European Standard is based on the former UIAA-Standard N (Union Internationale des Associations d'Alpinisme), which has been prepared with international participation.

This European 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 energy absorbing systems for use in climbing on a klettersteig (via ferrata).

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 ISO 139, *Textiles — Standard atmospheres for conditioning and testing (ISO 139:2005)*

ISO 6487, *Road vehicles — Measurement techniques in impact tests — Instrumentation*

3 Terms and definitions

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

3.1

klettersteig

rock climbing route with artificially constructed, permanent belay

NOTE In some cases the term "via ferrata" is used instead of "klettersteig".

3.2

energy absorbing system

device with two or more attachment points used to reduce the impact force on the anchorage and on an attached climber during a fall

3.3

braking length

increase in the distance between the two attachment points measured at the end of the braking action

4 Safety requirements

4.1 Design

4.1.1 Load bearing connections

All textile load bearing connections shall be designed so that they cannot be altered by the user.

4.1.2 Connectors

If an energy absorbing system is fitted with connectors for attachment to a via ferrata, these connectors shall be type K connectors according to EN 12275.

4.1.3 Construction

The energy absorbing system shall be designed so that it cannot be disassembled into its component part, except for the connectors.

4.2 Operation of the energy absorbing system

4.2.1 When tested in accordance with 5.5.2, the static force to initiate operation of the energy absorbing system shall be greater than 1,2 kN.

4.2.2 When tested in accordance with 5.5.3:

- the maximum impact force shall not exceed 6 kN;
- the maximum braking length shall not exceed 1 200 mm.

4.3 Strength of the energy absorbing system

When tested in accordance with 5.5.4, after being subjected to the test in accordance with 5.5.2, the energy absorbing system shall withstand a static force of 9 kN without breakage.

5 Test methods

5.1 Design

Check by visual examinations and handling that the requirements specified in 4.1.1 to 4.1.3 are met.

5.2 Test sequence

The test samples shall be subjected to the test according to 5.5.2. Additional test samples shall be subjected to the tests according to 5.5.3 and 5.5.4, in that order.

5.3 Conditioning and test conditions for energy absorbing systems with textile components

Condition the test samples in accordance with EN ISO 139. Tests may then be done outside the conditioning room, but the temperature shall be $(23 \pm 5) ^\circ\text{C}$ and the tests shall begin within 5 min of removal from conditioning room.

5.4 Apparatus

For the test in accordance with 5.5.3, the force measuring device and its associated recording equipment shall meet the following requirements in accordance with ISO 6487:

- a) the apparatus for measuring and recording the arresting impact force shall correspond with ISO 6487, channel frequency class (CFC) 30;
- b) the force transducer, in its operating position attached to the fixed point, shall not have a resonance frequency below 100 Hz;
- c) the channel amplitude class (CAC) shall be at least 20 kN;
- d) the error of the measurement of the arresting impact force (static calibration) shall be less than 1 %;
- e) the position of the upper timing point shall correspond with the position of the falling mass when it has fallen $(4\,500 \pm 2)$ mm from its initial pre-release position. The position of the lower timing point shall be $(1\,000 \pm 2)$ mm vertically below the upper timing point. Release the falling mass from its normal release position, but without any rope attached. Check that the time interval between the falling mass passing the upper and lower timing points is within the range $(101,1 \begin{smallmatrix} +1,3 \\ -0,3 \end{smallmatrix})$ ms.

5.5 Procedure

5.5.1 General

Carry out the test described in 5.5.2 to 5.5.4 for each of the possible different combinations of attachment between body and klettersteig, allowable by the manufacturer. Use a new sample for each combination.

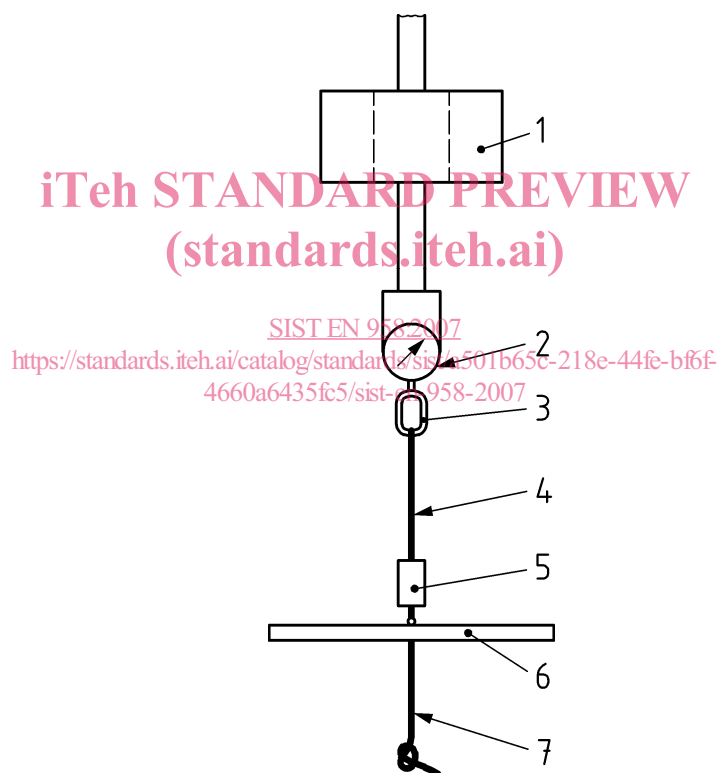
5.5.2 Determination of the static force to initiate operation

Mount the test sample in a tensile testing machine according to the combination described in 5.5.1.

Apply a progressively increasing force at an operating speed of 100 mm/min to 150 mm/min and check that the operation of the energy absorbing system does not occur below 1,2 kN.

5.5.3 Determination of impact force and braking length

Suspend the test sample from a fixed point by the via ferrata attachment points as described in 5.5.1 via a force measuring device, see example in Figure 1.



Key

- 1 falling mass 80 kg (guided)
- 2 force measuring device
- 3 connector attached to the via ferrata attachment point
- 4 connecting element
- 5 energy absorber system
- 6 catch-plate attached to the body attachment point
- 7 braking element

Figure 1 — Example of test configuration