



SLOVENSKI STANDARD
oSIST prEN 958:2012
01-december-2012

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

Equipement d'alpinisme et d'escalade - Absorbeur d'énergie utilisés en via ferrata - Exigences de sécurité et méthodes d'essai

<https://standards.iteh.ai/catalog/standards/sist/a70779b6-943c-46c3-b014-6f71a3195468/osist-pr-en-958-2012>

Ta slovenski standard je istoveten z: prEN 958

ICS:

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

oSIST prEN 958:2012

en,fr,de

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[oSIST prEN 958:2012](#)

<https://standards.iteh.ai/catalog/standards/sist/a70779b6-943c-46c3-b014-6f71a3195468/osist-pren-958-2012>

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

DRAFT
prEN 958

September 2012

ICS 97.220.40

Will supersede EN 958:2006+A1:2010

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 - Absorbent
d'énergie utilisés en via ferrata - Exigences de sécurité et
méthodes d'essai

Bergsteigerausrüstung - Fangstoßdämpfer für die
Verwendung auf Klettersteigen - 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.

This draft European Standard was established by CEN 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 CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of 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 United Kingdom.

Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

Warning : This document is not a European Standard. It is distributed for review and comments. It is subject to change without notice and shall not be referred to as a European Standard.



EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

Management Centre: Avenue Marnix 17, B-1000 Brussels

Contents	Page
Foreword.....	3
Introduction	4
1 Scope	5
2 Normative references	5
3 Terms and definitions	5
4 Safety requirements	5
4.1 Design	5
4.2 Operation of the energy absorbing system	6
4.3 Strength of the energy absorbing system	6
5 Test methods.....	6
5.1 Design	6
5.2 Test sequence	6
5.3 Conditioning and test conditions for energy absorbing systems with textile components.....	6
5.4 Apparatus	6
5.5 Procedure	7
6 Marking	9
7 Information supplied by the manufacturer	9
Annex A (informative) Standards on mountaineering equipment.....	10
Annex ZA (informative) Relationship between this European Standard and the Essential Requirements of EU Directive 89/686/EEC	11

<https://standards.iteh.ai/catalog/standards/sist/a70779b6-943c-46c3-b014-6f71a3195468/osist-pren-958-2012>
 oSIST prEN 958:2012

Foreword

This document (prEN 958:2012) 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 document is currently submitted to the CEN Enquiry.

This document will supersede EN 958:2006+A1:2010.

Compared to the previous edition EN 958:2006+A1:2010 the following technical changes have been made:

- a) in the scope, energy absorbing systems (EAS) according to this document have been limited to users weighing not less than 50 kg (total weight including the equipment);
- b) in 4.2, the maximum braking length was changed to 1 750 mm;
- c) in Clauses 6 and 7, the requirement of 50 kg was added.

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 89/686/EEC, see informative Annex ZA, which is an integral part of this document.

TC136 STANDARD PREVIEW
(standards.iteh.ai)

[oSIST prEN 958:2012](https://standards.iteh.ai/catalog/standards/sist/a70779b6-943c-46c3-b014-6f71a3195468/osist-pren-958-2012)

<https://standards.iteh.ai/catalog/standards/sist/a70779b6-943c-46c3-b014-6f71a3195468/osist-pren-958-2012>

prEN 958:2012 (E)

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.

iTeh STANDARD PREVIEW (standards.iteh.ai)

[oSIST prEN 958:2012](https://standards.iteh.ai/catalog/standards/sist/a70779b6-943c-46c3-b014-6f71a3195468/osist-pren-958-2012)

<https://standards.iteh.ai/catalog/standards/sist/a70779b6-943c-46c3-b014-6f71a3195468/osist-pren-958-2012>

1 Scope

This European Standard specifies safety requirements and test methods for energy absorbing systems for use in climbing on a klettersteig (via ferrata) for people weighing not less than 50 kg (total weight including the equipment).

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

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

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 1 to entry: 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

3.4

deployment position

arrangement or positioning of the energy absorbing device such that the energy absorbing systems can come into correct use in the event of climber fall arrest

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.

prEN 958:2012 (E)**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.

4.1.4 Deployment position

The deployment position of the braking system shall be designed in such a way that it can easily be checked by visual examinations by the user.

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 1 750 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 that the requirements specified in 4.1.1 to 4.1.4 (4.1.4 based on the information supplied by the manufacturer) 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.

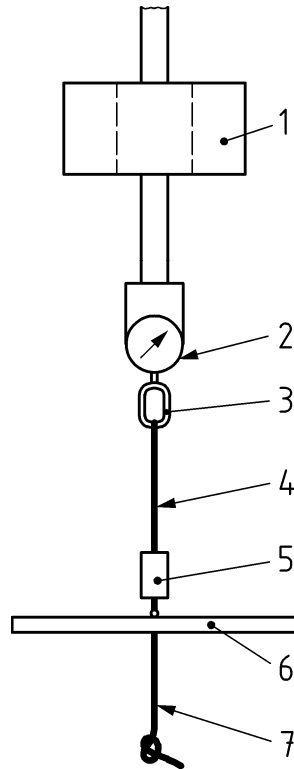
Apply a progressively increasing force at an operating speed of 100 mm/min to 150 mm/min and check that the operation of the energy absorbing system does not occur below 1,2 kN.

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.

ITeH STANDARD PREVIEW
(standards.iteh.ai)

<https://standards.iteh.ai/catalog/standards/sist/a70779b6-943c-46c3-b014-6f71a3195468/osist-pren-958-2012>



iTeh STANDARD PREVIEW (standards.iteh.ai)

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 <https://standards.iteh.ai/catalog/standards/sist/a70779b6-943c-46c3-b014-195468/osist-pren-958-2012>
- 6 catch-plate attached to the body attachment point
- 7 braking element

Figure 1 — Example of test configuration

Attach a catch-plate to the other attachment point. Measure and record the distance apart of the two attachment points of the energy absorbing system in the position loaded only by the catch plate.

Subject the test sample to the impact loading of a mass of $(80 \pm 0,1)$ kg falling a distance of $(5\ 000 \pm 20)$ mm. The mass shall fall under gravity, guided, onto a rigid non-compressible catch-plate of mass $(5 \pm 0,1)$ kg.

Record the force between the fixed point and the attachment point of the test sample throughout the test. Record the peak force corresponding to the impact.

After the falling mass has come to rest, measure the distance apart of the two attachment points of the energy absorbing system under the static load of the falling mass within 1 min after fall. Calculate and record the braking length.

5.5.4 Determination of static breaking force

Mount the test sample in the configuration arising at the end of the previous test between the two attachment points in a tensile testing machine.

Apply a progressively increasing force at an operating speed of $(100 \text{ to } 150)$ mm/min until the force exceeds 9 kN.