BS EN 958:2017

BSI Standards Publication

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

bsi.

National foreword

This British Standard is the UK implementation of EN 958:2017. It supersedes BS EN 958:2006+A1:2010 which is withdrawn.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 - Energy absorbing systems for use in klettersteig (via ferrata) climbing - Safety requirements and test methods

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

Bergsteigerausrüstung - Fangstoßdämpfer für die Verwendung auf Klettersteigen (Via Ferrata) - Sicherheitstechnische Anforderungen und Prüfverfahren

This European Standard was approved by CEN on 16 January 2017.

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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 CEN-CENELEC Management Centre has the same status as the official versions.

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European foreword

This document (EN 958:2017) 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of an identical text or by endorsement, at the latest by September 2017, and conflicting national standards shall be withdrawn at the latest by September 2017.

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

This document supersedes EN 958:2006+A1:2010.

In comparison 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 40 kg (total weight without equipment) and no more than 120 kg (total weight including the equipment);

b) additional design requirements for the arm and overall lengths;

c) in 4.2, the maximum braking length was changed to 2200 mm;

d) in Clauses 6 and 7, the requirements of 40 kg and 120 kg was added;

e) in 4.3.3 a fatigue test 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.

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, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

1 Scope

This European Standard specifies safety requirements and test methods for energy absorbing systems (EAS) for use in climbing on a Via Ferrata, for users weighing not less than 40 kg (total weight without equipment) and no more than 120 kg (total weight including the equipment).

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

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 565, *Mountaineering equipment - Tape - 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*

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

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

ISO 7000, *Graphical symbols for use on equipment — Registered symbols*

3 Terms and definitions

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

3.1
Via Ferrata
route consisting of a fixed climbing installation including a safety line where the user is not always supervised

Note 1 to entry: The mere presence of a wire cable/rope on a mountain route does not constitute a Via Ferrata (e.g. Hörnli Ridge on Matterhorn).

3.2
safety line
flexible or rigid, horizontal, vertical or sloping, continuous or discontinuous installation, used as protection against fall from a height and possible progression aid

3.3
energy absorbing system (EAS)
device connecting the climber to the safety line, using an energy absorber to limit the impact forces on the climber and the fixed installation

Note 1 to entry: See Figure 1.

3.4
energy absorber
part of the EAS which limits the impact force during a climber's fall

Note 1 to entry: See Figure 1.

3.5
braking length
increase in the distance between the connection to the safety line and the connection to the harness after the climber's fall

3.6
initial arrangement
original configuration of an un-activated energy absorber

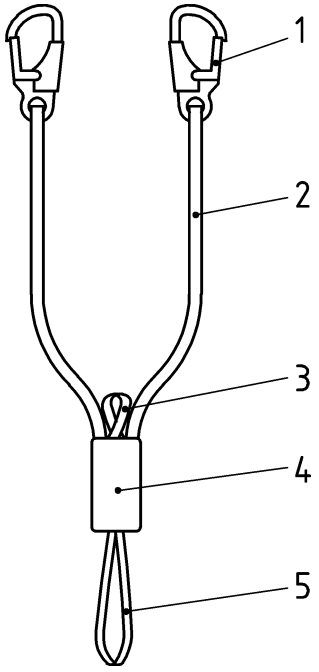
3.7
arm
part of the EAS between the energy absorber and the connecting device to the safety line of the Via Ferrata; an arm may be elasticated or non-elasticated

Note 1 to entry: See Figure 1.

3.8
elasticated arms
arms with a static elongation of the arm material, as measured in 5.2.4.5, greater than 5 %

3.9
rest attachment point
specific attachment point intended to attach the user to the safety line or to the anchor points of the Via Ferrata to take a rest

Note 1 to entry: See Figure 1.



Key

1 connecting device (to Via Ferrata)
2 arm
3 rest attachment point
4 energy absorber
5 harness attachment point (to climber)

Figure 1 — Example of an energy absorbing system

4 Safety requirements

4.1 Design

4.1.1 Construction

4.1.1.1 General

All load bearing connections shall be designed so that they cannot be altered or disassembled by the user, with the exception of removable connecting devices. EAS shall not have any sharp or rough edges that may cut, abrade or cause injury to the user.

4.1.1.2 Distance between the two arm extremities

When measured in accordance with 5.1.2, the distance between the two extremities of the arms (without connecting devices) shall be ≥ 1 000 mm, unless there is only a single arm.

4.1.1.3 Overall length of EAS

When measured in accordance with 5.1.3, the length of the energy absorbing system without connecting devices shall be ≤ 1 500 mm

4.1.2 Connecting device

If the connecting device is a connector according to EN 12275, it shall be a type K connector.

If an EAS is not fitted with a connector of type K according to EN 12275, refer to the information supplied by the manufacturer of the EAS (see Clause 7).

4.1.3 Connection to the safety line

There shall be at least two arms intended for attachment to the safety line, unless designed for a continuous system which does not permit disconnection of the EAS from the safety line (except at entry and exit points), where just one arm could be used.

4.1.4 Initial arrangement

The initial arrangement of the energy absorber shall be designed in such a way that it can easily be checked by visual examination by the user.

4.1.5 Rest attachment point

The rest attachment point shall activate the energy absorber in case of fall.

4.2 Operation of the EAS

4.2.1 General

Table 1 summarizes the dynamic performance requirements of the EAS, which are described in detail in 4.2.3 to 4.2.4.

Table 1 — Summary of dynamic test requirements of the EAS

Symbol	Test 1	Test 2	Test 3	Test 4
M	40 kg	120 kg	120 kg	120 kg
EAS wet or dry	Dry	Dry	Dry	Wet
Arm (s)	The two arms connected	The two arms connected	If symmetrical test one arm. If asymmetrical test each arm.	Most constraining (configuration with the maximum braking length)
F_{max}	3,5 kN	6 kN	6 kN	8 kN
L_{max}	< 2 200 mm	< 2 200 mm	< 2 200 mm	< 2 200 mm

M: rigid steel mass equal to the maximum user weights (with equipment) and minimum user weights (without equipment).

F_{max}: max. allowable impact force during dynamic test.

L_{max}: max. braking length.

4.2.2 Force to initiate operation

When tested in accordance with 5.2.4.2, the static force to initiate operation of the EAS shall be greater than 1,3 kN (see Table 2).

4.2.3 Dynamic performance

The requirements of the dynamic tests 1, 2 and 3 shall be fulfilled (see Table 1).

a) When tested in accordance with 5.2.4.3 with a rigid steel mass of 40 kg the maximum impact force shall not exceed 3,5 kN and the maximum braking length shall not exceed 2 200 mm.

b) When tested in accordance with 5.2.4.3 with a rigid steel mass of 120 kg the maximum impact force shall not exceed 6 kN and the maximum braking length shall not exceed 2 200 mm.

4.2.4 Dynamic strength of the EAS under wet conditions

After conditioning the selected sample according to 5.2.4.4, when tested in accordance with 5.2.4.3, using a rigid steel mass of 120 kg, the maximum impact force shall not exceed 8 kN, and the maximum braking length shall not exceed 2 200 mm.

4.3 Static strength of the energy absorbing system

4.3.1 General

Table 2 summarizes the static strength requirements of the EAS, which are described in detail in 4.3.2 to 4.3.5.

Table 2 — Summary of static test requirements of the EAS

Symbol	Minimum static strength kN
F_{init}	1,3
F_{stat}	12
$F_{stat\text{-}elast\ arm}$	12
$F_{stat\ non\text{-}elast\ arm}$	15
$F_{rest\ ap}$	12

F_{init}: minimum static strength to initiate operation

F_{stat}: minimum static strength of whole system after dynamic tests

$F_{stat\text{-}elast\ arm}$: minimum static strength after fatigue test of elasticated arm

$F_{stat\ non\text{-}elast\ arm}$: minimum static strength of non-elastic arm

$F_{rest\ ap}$: minimum static strength of rest attachment point

4.3.2 Static strength of the whole system

When tested in accordance with 5.3.1 after being subjected to the dynamic test in accordance with 5.2.4.3, the EAS shall withstand a static force greater than 12 kN (see Table 2).

4.3.3 Breaking strength of the components of elasticated arms

The decrease of breaking strength after the fatigue test in accordance with 5.3.2.2 compared to the breaking strength when new shall not exceed 30 % and the breaking strength shall be more than 12 kN (see Table 2).

All elasticated arms shall be checked unless the manufacturer states that the elasticated arms are manufactured from the same material, and have identical strengths, performance, design and construction.

4.3.4 Breaking strength of the textile components of non-elasticated arms and harness attachment point

Every textile component of non-elasticated arms and harness attachment point shall withstand a static force greater than 15 kN without breakage when tested in accordance with 5.3.3 (see Table 2).

4.3.5 Energy absorber initiation force

When tested in accordance with 5.2.4.2 the initiation force shall be greater than 1,3 kN (see Table 2).

4.3.6 Breaking strength of the rest attachment point

If an EAS is fitted with a rest attachment point, when tested in accordance with 5.3.4, the breaking strength of the rest attachment point shall be greater than 12 kN (see Table 2).

5 Test methods

5.1 Design

5.1.1 General

Check by visual examinations that the requirements specified in 4.1.1 to 4.1.5 (4.1.4 and 4.1.5 based on the technical documentation supplied by the manufacturer) are met.

5.1.2 Measurement of the distance between the two arm extremities

With the longest arm configuration, suspend the two arm extremities between a fixed point via a pin of diameter (12 ± 0,1) mm, if not supplied with connecting device, to a mass of (5 ± 0,1) kg via a pin of (12 ± 2,0) mm diameter, if not supplied with connecting device, and maintain this load for (60 ± 5) s.

Measure the distance between the ends of the loaded arm extremities.

5.1.3 Measurement of the overall length of the EAS

Attach the longest arm extremity to a fixed point via a pin of diameter (12 ± 0,1) mm, if not supplied with connecting device. Attach the harness attachment point of the EAS in accordance with the information supplied by the manufacturer, via a pin of diameter (12 ± 2,0) mm to a rigid steel mass of (8 ± 0,1) kg and maintain this load for (60 ± 5) s.

Measure the distance between the end of the loaded arm extremity and the lowest part of the harness attachment point.

5.2 Operation tests

5.2.1 General

A test sample shall be subjected to the test according to 5.2.4.2. Additional test samples shall be subjected to the tests according to 5.2.4.3. The test sample subjected to 5.2.4.3 test at 120 kg shall then be tested according to 5.3.1. An additional test sample shall be subjected to the wet test according to 5.2.4.4.

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

Dry the test samples for at least 24 h in an atmosphere of (50 ± 5) °C and less than 20 % relative humidity. Then condition these test samples in an atmosphere of (23 ± 2) °C and (50 ± 2) % relative humidity for at least 72 h. Test each sample at a temperature of (23 ± 5) °C within 10 min of removal from atmosphere.

5.2.3 Apparatus

For the dynamic test in accordance with 5.2.4.3, 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 falling masses of (40 ± 0,1) kg and (120 ± 0,2) kg shall be made of metal and their fall shall be guided by two vertical rigid guidance rails.

f) The position of the upper timing point shall correspond with the position of the falling mass when it has fallen (4 500 ± 10) mm from its initial pre-release position. The position of the lower timing point shall be (1 000 ± 5) mm vertically below the upper timing point. Release the falling mass from its normal release position. Check that the time interval between the falling mass passing the upper and lower timing points in within the range $101,1^{+1,3}_{-0}$ ms.

5.2.4 Procedure

5.2.4.1 General

Carry out the test described in, 5.2.4.3 and 5.3.1 for each of the possible different configurations of attachment between harness attachment point and arms (see Figure 1), allowed by the manufacturer. Use a new sample for each combination.

5.2.4.2 Determination of the static force to initiate operation

Mount the test sample in a tensile testing machine according to the information supplied by the manufacturer via pins of diameter (10 ± 0,1) mm. The load will be applied between the harness attachment point and one of the connecting devices simultaneously.

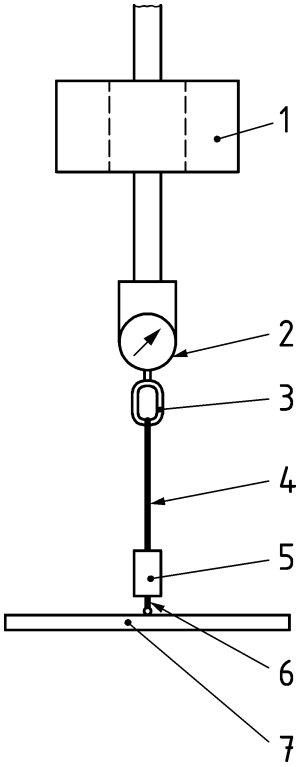
Apply an increasing force at an operating speed of (100 to 150) mm/min and check that the requirement of 4.3.5 is met.

5.2.4.3 Determination of impact force and braking length

A new test sample shall be used for each test.

For the test with 40 kg, the sample shall be tested in the configuration with all arms connected. For the test with 120 kg, all configurations shall be tested: every arm individually connected (only test one arm if the design and construction of the arms are identical) and all arms connected (see Table 1).

Suspend the test sample, as specified in the information supplied by the manufacturer, from a fixed point via a pin of diameter (12 ± 2) mm by the connecting device (to Via Ferrata) via a force measuring device (see example in Figure 2).



Key

1 falling rigid steel mass 40 kg or 120 kg (guided)
2 force measuring device
3 connecting device
4 arm(s)
5 energy absorber
6 harness attachment point
7 catch plate attached to the harness attachment point

Figure 2 — Example of test configuration

Attach a catch plate to the harness attachment point via a pin of diameter (12 ± 2) mm. Measure and record the distance between the Via Ferrata connecting device and the catch plate attachment point.

Using a new sample for each test, raise a rigid steel mass to achieve a falling distance of (5 000 ± 20) mm and hold it by a quick release device.

The rigid steel mass shall fall under gravity, guided onto a catch-plate of mass (5,0 ± 0,1) kg for tests with (40 kg), and (8,0 ± 0,1) kg for tests with (120 kg). Release the mass and record the peak force corresponding to the impact.

After the falling mass has come to rest, measure, within 1 min after the fall, the distance between the Via Ferrata connecting device and the catch plate attachment point described above under the static load of the falling mass. Calculate the braking length.

5.2.4.4 Operation test under wet condition

For this test use the arm(s) configuration which has given the longest braking length in the dynamic test (see 5.2.4.3). Put a test sample in potable water at a temperature of (23 ± 5) °C for at least one hour. Test the wet sample according to 5.2.4.3 Test 4 (120 kg). The test shall be carried out within 5 min after removal from the water.

5.2.4.5 Elastic arm static elongation method

Suspend the EAS by the harness attachment point as specified by the manufacturer via a pin of (10 ± 0,1) mm diameter.

Load the test sample without shock with a mass of (5 ± 0,1) kg attached to the connecting device via a pin of (12 ± 0,1) mm diameter and maintain this load for (60 ± 5) s.

Measure the distance L_1 between the end of the harness attachment point and the end of the loaded arm.

Remove the load from the test sample and allow it to remain at rest for (60 ± 5) s.

Measure the distance L_0 between the end of the harness attachment point and the end of the unloaded arm and calculate the elongation according to Formula (1):

$$\text{Calculate}\left(\frac{L_1 - L_0}{L_0}\right) \text{x } 100, \text{in } \% \quad (1)$$

Repeat the measurement for all arms if not identical in design and construction.

5.3 Strength test

5.3.1 Determination of static strength of the whole system

Use one of the test samples already subjected to the dynamic test (5.2.4.3, mass of 120 kg) done with a single arm connected. Mount the test sample in the deployed configuration arising at the end of 5.2.4.3 mass of 120 kg between the connecting device and the harness attachment point in a tensile testing machine.

The harness attachment point is fixed according to the information supplied by the manufacturer, via a pin of diameter (10 ± 0,1) mm. The connecting device is fixed to the force measuring device via a pin of diameter (12 ± 0,1) mm.

Apply a progressively increasing force at an operating speed of (200 to 400) mm/min until the force reaches a value of 12 kN.

Repeat this test on the other arm(s) if the arms are not identical in design and construction.

5.3.2 Fatigue test for elasticated arms

5.3.2.1 Sampling

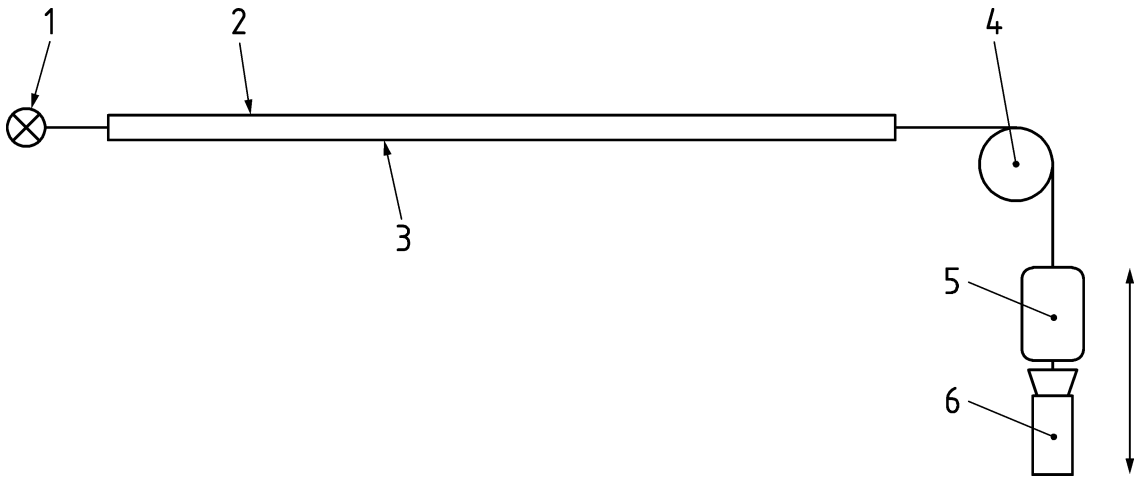
The manufacturer shall provide two samples of at least 3 m (one for testing before and one after the fatigue test) of the elasticated webbing identical to the ones used for the arms of the product.

5.3.2.2 Fatigue test

The test shall be carried out at a room temperature of (23 ± 5) °C.

A mass of (5 ± 0,1) kg is used to fully load and fully unload the sample for 50 000 cycles at a rate of (0,5 ± 0,1) Hz (see Figure 3). The active testing length of the sample shall be equal ± 10 % to the active length of the longest arm of the EAS.

The test shall be carried out using a machine for cyclic testing with a mass and unloading system (see Figure 3 as an example).



Key

1 attachment
2 test sample
3 single strand arm
4 roll
5 mass
6 unloading system

Figure 3 — Example of test configuration for the fatigue test of elasticated arms

5.3.2.3 Breaking strength of elasticated arms after the fatigue test

After the fatigue test mount the test sample in a tensile testing machine and fixing devices in accordance with EN ISO 2307.

Increase the load in accordance with EN 565 until complete failure and record the breaking strength.

A new sample shall be tested according to EN 565, for determination of its breaking strength. Increase the load until complete failure and record the breaking strength.

Check that the requirements of 4.3.2 are met.

5.3.3 Breaking strength of the textile components of non-elasticated arms

5.3.3.1 Sampling

The manufacturer shall provide samples of the same textile material as the ones which make up the arms of the product.

5.3.3.2 Breaking test

Webbing components shall be tested in accordance with EN 565. Rope components shall be tested in accordance with the static strength test without termination as defined in EN 1891.

5.3.4 Breaking test of the rest attachment point

Use the test sample already subjected to the dynamic test (5.2.4.3, mass 120 kg) done with all arms connected. Mount the test sample in a tensile testing machine, so that the rest attachment point is loaded in the expected working orientation.

Apply an increasing force at an operating speed of (200 to 400) mm/min until the force reaches 12 kN.

6 Marking

Energy absorbing systems shall be marked clearly, indelibly and durably with at least the following information:

a) name of the manufacturer or its authorized representative;

b) identification of the model, if several models are marketed by the same manufacturer;

c) year of manufacture;

d) indication of the initial arrangement of the EAS braking system;

e) minimum and maximum user weights of 40 kg (without equipment) and 120 kg (with equipment).

f) graphical symbol (see Figure 4), which instructs the user to read the information supplied by the manufacturer.

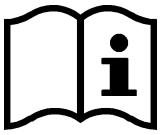


Figure 4 — Operator's manual (according to ISO 7000, Symbol No. 1641)

7 Information supplied by the manufacturer

The energy absorbing system shall be supplied with explanatory leaflet, containing at least the following information:

a) Name and address of the manufacturer or its authorized representative.

b) Reference number of this European Standard, i.e. EN 958.

c) Correct use of the product including:

1) Advice that the device should be used only by people weighing from 40 kg (total weight without equipment) to 120 kg (total weight including the equipment). If the user is outside this weight range progression in a rope party is required.

2) Advice that the device should only be used by competent and trained individuals who are qualified to understand the information notes and ensure their application. Otherwise the user should be under the direct supervision of a competent and trained person;

3) The meaning of any marking on the product;

4) A warning that during a fall, the EAS will deploy, and the deployed EAS may no longer function to safely arrest a second fall;

5) How to choose any other components for use in the system;

6) How to carry out visual inspection by the user before and after use, and how to detect wear or damage;

7) Never modify the EAS e.g.: never make any knot in the arms (strength decreasing).

8) How to correctly attach the EAS to the user's harness.

9) A warning to beware of entrapment (strangulation risk while using the EAS.)

d) How to maintain/service the product, including:

1) Advice on retirement criteria, after a fall or wear of the product;

2) Storage (humidity, icing, dust, sun, heat ...)

3) Effects of chemical reagents and temperature on the product;

4) Minimum annual inspection by a competent person;

5) Lifespan of the product.

Annex A
(informative)

Standards on mountaineering equipment

Table A.1 — List of standards on mountaineering equipment

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

No	Document	Title
18	EN 15151–1	Mountaineering equipment — Braking devices — Part 1: Braking devices with manually assisted locking, safety requirements and test methods
19	EN 15151–2	Mountaineering equipment — Braking devices — Part 2: Manual braking devices, safety requirements and test methods
20	EN 16716	Mountaineering equipment — Avalanche Airbag systems — Safety requirements and test methods
21	prEN 16869	Design/construction of Via Ferrata

Annex ZA
(informative)

Relationship between this European Standard and the essential requirements of Directive 89/686/EEC aimed to be covered

This European Standard has been prepared under a Commission's standardization request M/031 "Personal Protective Equipments" to provide one voluntary means of conforming to essential requirements of Directive 89/686/EEC "Personal Protective Equipment".

Once this standard is cited in the Official Journal of the European Union under that Directive, compliance with the normative 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 Article(s) of Directive 89/686/EEC

Essential Requirements of Directive 89/686/EEC		Clause(s)/subclause(s) of this EN	Remarks/ Notes
1.2.1	Absence of risks and other "inherent" nuisance factors	4.1.1, 4.2.4	
1.3.2	Lightness and design strength	4.1	
1.4	Information supplied by the manufacturer	Clauses 6 and 7	
2.4	PPE subject to ageing	4.3	
2.8	PPE for use in very dangerous situations	Clause 7	
2.9	PPE incorporating components which can be adjusted or removed by the user	4.1	
2.12	PPE bearing one or more identification or recognition marks directly or indirectly relating to health and safety	Clause 6	
3.1.2.2	Prevention of falls from a height	Clause 4	EAS according to this standard are only one part of the safety chain and should be used in conjunction with other compatible equipment.

WARNING 1 — Presumption of conformity stays valid only as long as a reference to this European Standard is maintained in the list published in the Official Journal of the European Union. Users of this standard should consult frequently the latest list published in the Official Journal of the European Union.

WARNING 2 — Other Union legislation may be applicable to the product(s) falling within the scope of this standard.

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