



**SLOVENSKI STANDARD**  
**SIST EN 569:1998**

**01-september-1998**

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**Gorniška oprema - Plezalni klini - Varnostne zahteve in preskusne metode**

Mountaineering equipment - Pitons - Safety requirements and test methods

Bergsteigerausrüstung - Felshaken - Sicherheitstechnische Anforderungen und Prüfverfahren

Equipement d'alpinisme et d'escalade - Pitons - Exigences de sécurité et méthodes d'essai

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**Ta slovenski standard je istoveten z: EN 569:1997**

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**ICS:**

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

EN 569

NORME EUROPÉENNE

EUROPÄISCHE NORM

February 1997

ICS 97.220.40

Supersedes EN 569:1992

Descriptors: sport equipment, mountaineering, mountaineering pitons, safety, specifications, tests, inspection, break strength, marking

English version

## Mountaineering equipment - Pitons - Safety requirements and test methods

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

Bergsteigerausrüstung - Felshaken -  
Sicherheitstechnische Anforderungen und  
Prüfverfahren

This European Standard was approved by CEN on 1997-01-27. 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.

The European Standards exist 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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**CEN**

European Committee for Standardization  
Comité Européen de Normalisation  
Europäisches Komitee für Normung

Central Secretariat: rue de Stassart, 36 B-1050 Brussels

## Foreword

This European Standard 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 supersedes EN 569:1992.

The text is based on UIAA-Standard R (Union Internationale des Associations d'Alpinisme), which has been developed with international participation.

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

Annexes A and ZA of this European Standard are informative.

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 August 1997, and conflicting national standards shall be withdrawn at the latest by August 1997.

This European Standard 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 89/686/EEC.

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

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

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## 1 Scope

This European Standard specifies safety requirements and test methods for pitons for use in mountaineering including climbing.

## 2 Definitions

For the purposes of this standard, the following definitions apply:

**2.1 piton:** Device which, when inserted into a rock crack by means of a hammer or equivalent device, provides an anchor.

NOTE: Two parts can normally be identified in the piton: the head and the blade.

**2.2 head:** Part of the piton which contains the attachment point eye (or eyes) used for connection to the rope (via a connector), and which is usually the part struck when inserting the piton.

**2.3 blade:** The part of the piton which is inserted into the rock crack.

**2.4 length of the piton:** Length of the blade measured in the direction of its insertion into the crack.

**2.5 pulling shackle:** The tool used to apply the force in the test.

**2.6 safety piton:** Piton which exhibits a high tensile strength (see table 1) and having a length of at least 90 mm.

**2.7 progression piton:** Piton with a lower tensile strength than safety pitons (see table 1).

## 3 Safety requirements

### 3.1 Design

3.1.1 The eye shall be at least 3 mm thick (see figure 1).

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3.1.2 The edges shall be rounded with a radius larger than 0,2 mm or bevelled larger than  $0,2 \text{ mm} \times 45^\circ$  (see figure 1).

Dimensions in millimetres

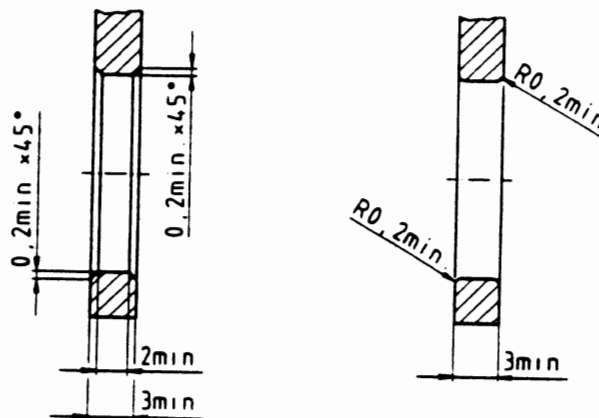


Figure 1: Attachment point eye dimensions

3.1.3 When tested according to 4.1, the eye shall have an internal diameter of at least 15 mm.

### 3.2 Tensile strength

When tested in accordance with 4.2, the tensile strength shall be not less than the appropriate value given in table 1.

Table 1: Minimum values of tensile strength

Type	Direction		
	$F_1$ kN min.	$F_2$ kN min.	$F_3$ kN min.
Safety pitons	25	10	15
Progression pitons	12,5	5	7,5

$F_1$  is the normal direction specified by the manufacturer;

$F_2$  is the reverse direction;

$F_3$  is the sideways direction

(see figures 2 and 3).

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## 4 Test methods

### 4.1 Examination of design

Test the requirements of 3.1 by measurement.

Check the clearance of the eye with a bar of a diameter of  $(15 + {}^{0,01})$  mm.

## 4.2 Determination of breaking force

### 4.2.1 Test samples

If a piton model is produced in different lengths, test only the shortest length in accordance with 4.2.5.

### 4.2.2 Test conditions

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

### 4.2.3 Apparatus

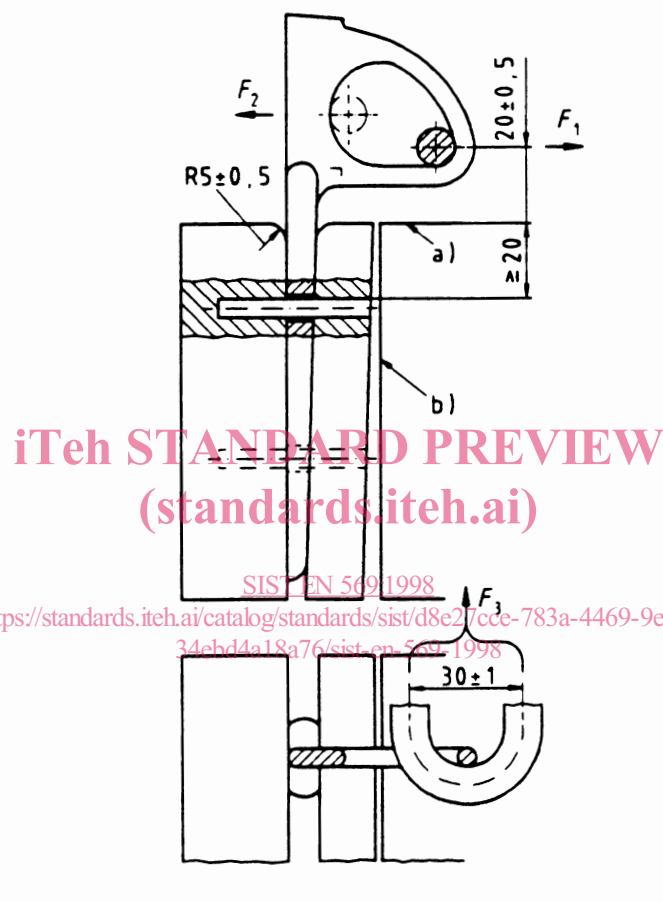
**4.2.3.1** Vice for holding the piton at a pressure that does not lead to visible deformation of the test sample and with edges of the two jaws holding the piton rounded to a radius of  $(5 \pm 0,5)$  mm (see figure 2). At least one of the jaws rotates in order to accommodate any tapered shape in the piton.

**4.2.3.2** A means of preventing extraction and rotation of the piton, e.g. one or two pins.

Ensure that the outer hole of the piton respectively the fixing system remains at least 20 mm from the outer surface of the jaw (see figure 2).

**4.2.3.3** Pulling shackle, made of steel, with a diameter of  $(10 \pm 0,1)$  mm to apply a force on the piton, the part of this device which is nearest to the piton being as indicated in figures 2 and 3. The shackle rotates freely around axes X and Y (see figure 3), to allow free deformation of the piton.

Dimensions in millimetres



a) horizontal surface  
b) vertical surface

Figure 2: Part of the test device

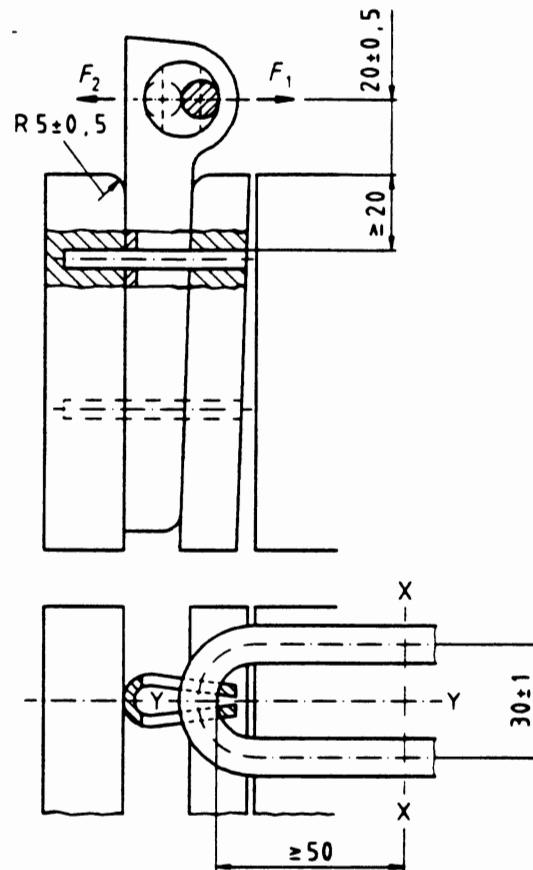


Figure 3: Part of the test device

#### 4.2.4 Preparation and positioning of test samples

If necessary, drill holes in the piton and jaw of the vice to accommodate the holding pins.

If this method of fixing is not feasible, use other means as advised by the manufacturer.

**NOTE:** The manufacturer can provide means to prevent rotation during side pull, particularly in cases where only one pin can be used.

Ensure that the holding system does not cause rupture of the piton.

For positioning apply a force of  $(100 \pm 10)$  N to the pulling device in " $F_1$ " direction with an initial distance of the line of action of the pulling force from the jaw surface of  $(20 \pm 0,5)$  mm (see figure 2). If this cannot be achieved, use the smallest possible distance. Use the same distance for each direction of force.

#### 4.2.5 Procedure

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Apply a force with a traction speed of  $(35 \pm 15)$  mm/min in the three following directions:

- normal pull ( $F_1$ ), specified by the manufacturer;
- reverse pull ( $F_2$ );
- side pull ( $F_3$ ).

If the piton is asymmetric, repeat the side pull in the opposing direction on an unloaded test sample.

If the test sample does not break when a force of 30 kN has been reached, terminate the test and report a value of 30 kN.



## 5 Informations to be supplied

- a) the name or trademark of the manufacturer, importer or supplier, together with their address;
- b) the number of this European Standard: EN 569;
- c) the meaning of any markings on the product;
- d) explanation of the indication of length;
- e) explanation of the symbol "S";
- f) information that the breaking force and the resistance of the piton will be reduced with the time, placed in a rock;
- g) the use of the product;
- h) how to choose other components for use in the system;
- i) how to maintain and service the product;
- j) the lifespan of the product;
- k) the effects of chemical reagents and temperature on the product.

## 6 Marking

The head of each piton shall be marked with at least the following information:

- a) the name or trademark of the manufacturer, importer or supplier;
- b) the piton length, expressed in centimetres rounded down to the nearest whole centimetre, prefixed by the letter "L" e.g. L10;
- c) safety pitons shall be marked with the letter "S" in a circle.

**NOTE:** If there is insufficient space on the head, the name or trademark of the manufacturer can be affixed to the piton blade.

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