



SLOVENSKI STANDARD

oSIST prEN 893:2007

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Gorniška oprema - Dereze - Varnostne zahteve in preskusne metode

Mountaineering equipment - Crampons - Safety requirements and test methods

Bergsteigerausrüstung - Steigeisen - Sicherheitstechnische Anforderungen und Prüfverfahren

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

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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
NORME EUROPÉENNE
EUROPÄISCHE NORM

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ICS 97.220.40

Will supersede EN 893:1999

English Version

Mountaineering equipment - Crampons - Safety requirements and test methods

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

Bergsteigerausrüstung - Steigeisen - 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.

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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.

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

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Foreword

This document (prEN 893:2006) has been prepared by Technical Committee CEN/TC 136 “Sports, playground and other recreational equipment”, the secretariat of which is held by DIN.

This document is currently submitted to the CEN Enquiry.

This document will supersede EN 893:1999.

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.

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Introduction

The text of this European Standard is based on the former UIAA-Standard S (Union Internationale des Associations d'Alpinisme), which has been developed 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 standard specifies safety requirements and test methods for crampons for use in mountaineering on snow and ice including climbing mixed terrain.

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 565, *Mountaineering equipment — Slings — Safety requirements and test methods*

EN 10109-1, *Metallic materials — Hardness test — Part 1: Rockwell test (scales A, B, C, D, E, F, G, H, K) and Rockwell superficial test*

ISO 9523, *Touring ski-boots for adults — Interface with ski-binding*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply (see Figure 1):

3.1

crampon

device fitted with spikes, which is intended to cover the sole of a boot, from toe to heel and from one side to the other, so as to provide grip on snow, ice and mixed terrain and which has a system of attachment to the boot

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3.2

frame

part or parts of the crampon which bears the spikes

3.3

front spike

forward pointing spike intended for use when climbing steep terrain

3.4

down spike

spike usually, but not necessarily, pointing vertically downward

3.5

binding

system of attachment to the boot

3.6

clip-on binding

particular binding which uses a lever mechanism for rapid attachment of a crampon to a boot

3.7

bail

stirrup-shaped part or parts of a binding used to connect the crampon to the toe and/or to the heel of the boot

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3.8 attachment rings or eyes

rings or eyes which are threaded by a part of the binding when fitted in accordance with the manufacturers instruction

3.9 adjustment system

system for adjusting the crampon to fit the boot

3.10 retaining system

system which prevents the climber from losing the crampon if the binding fails

3.11 spur

any other spike than front spikes and downward spikes

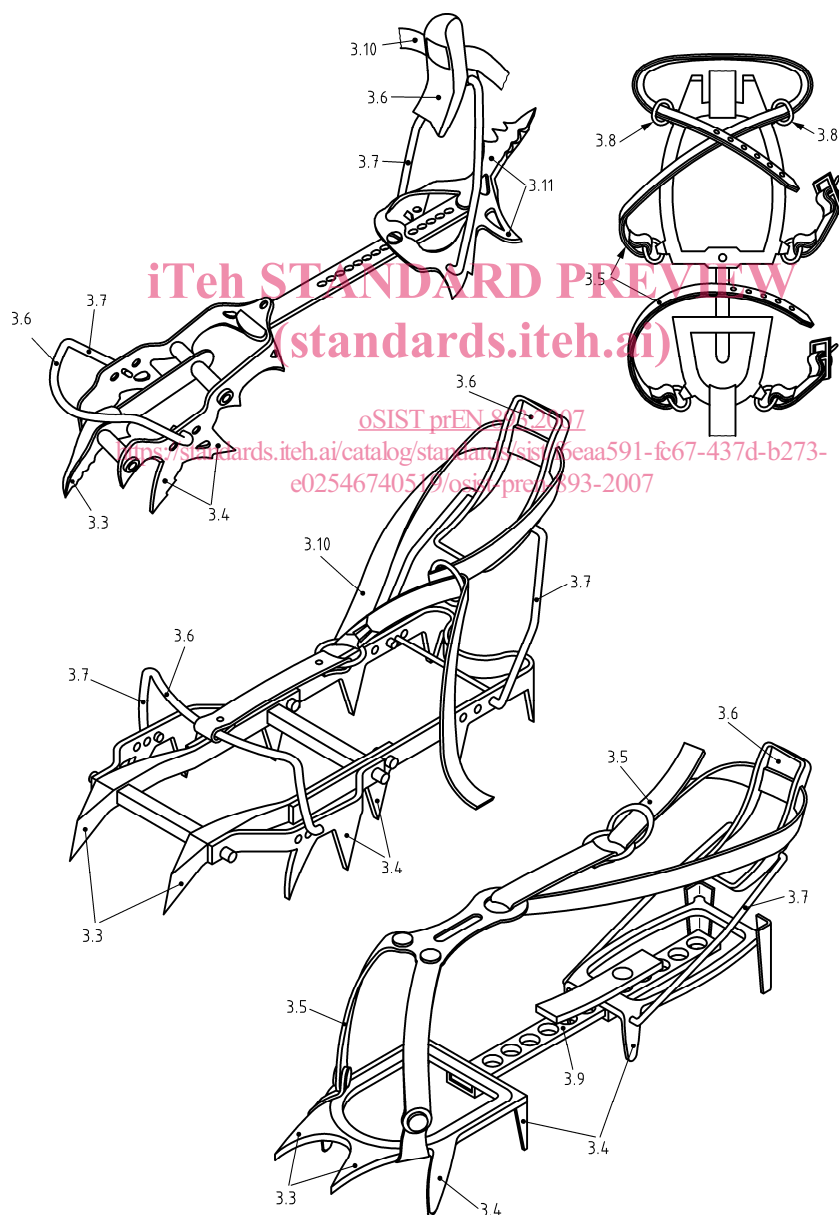


Figure 1 — Parts of a crampon

4 Safety requirements

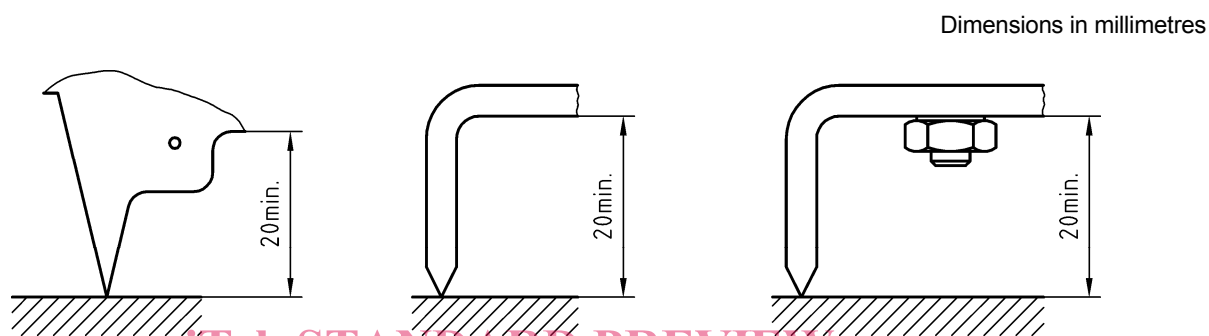
4.1 Shape and design

4.1.1 Each crampon shall have a system of attachment to the boot.

4.1.2 Each crampon shall have at least 8 spikes, not including spurs.

4.1.3 Each crampon shall have at least 6 downward spikes, which

- a) shall be at least 20 mm long (see Figure 2), and
- b) when walking normally on flat and smooth ice, shall touch the surface of the ice.



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Figure 2 — Length of spikes

4.1.4 All edges with which the users hands can come into contact shall be free from burrs.

4.1.5 If the crampon has a clip-on binding it shall be fitted with a retaining system.

4.2 Strength

4.2.1 Hardness

Each part of the crampon, which contains a spike or spikes, shall have a hardness of at least 70 HRB.

Testing according 5.4.1.3.

4.2.2 Bending and breaking strength of spikes

When tested according to 5.4.2, the maximum deformation under load and the permanent deformation after removing the load, measured at the point of application, shall not be more than shown in Table 1. The breaking strength shall be at least as shown in Table 1.

Spurs shall be tested with a load applied in each intended direction.

Table 1 — Strength of spikes

Types of spikes	Applied load N	Deformation under load mm	Permanent deformation mm	Minimum breaking strength N
Downward spikes	900 ± 20	15	7	1 200
Front spikes (if more than one) and spur	1 200 ± 30	15	7	1 500
Single front spike (mono-spike)	1 600 ± 40	15	7	2 000

4.2.3 Transverse strength of bails of clip-on bindings

When tested in the operating position and according to 5.4.3, the bails of clip-on bindings shall not break and shall not come out of the frame of the crampon. Permanent deformation is acceptable.

If the crampon is directly attached or integrated into a boot the strength requirements are not applicable.

4.2.4 Strength of binding parts other than bails

When tested according to 5.4.4, each part shall not break.

4.2.5 Strength of attachment rings and eyes and of the appropriate part of the binding

When tested according to 5.4.6, attachment rings and eyes and the appropriate part of the binding shall not break.

If the crampon is directly attached or integrated into a boot the strength requirements are not applicable.

4.2.6 Longitudinal strength of the frame

When tested according to 5.4.7, the frame including the longitudinal adjustment system shall not break.

5 Test methods

5.1 Test samples

The tests shall be carried out on the following number of test samples:

- a) If the left and the right crampon are of identical shape: 2 test samples (one test sample for the tests in 5.4.2 and one test sample for the tests in 5.4.1 and 5.4.3 to 5.4.7).
- b) If the left and the right crampon are of different shapes: 2 pairs (one pair for the tests in 5.4.2 and one pair for the tests in 5.4.1 and 5.4.3 to 5.4.7).

5.2 Test conditions

5.2.1 All tests shall be carried out at a room temperature of (23 ± 5) °C.