



SLOVENSKI STANDARD

oSIST prEN 13089:2007

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Gorniška oprema - Orodje za led - Varnostne zahteve in preskusne metode

Mountaineering equipment - Ice-tools - Safety requirements and test methods

Bergsteigerausrüstung - Eisgeräte - Sicherheitstechnische Anforderungen und Prüfverfahren

Equipement d'alpinisme et d'escalade - Outils à glace - Exigences de sécurité et méthodes d'essai

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Oprema za športe na
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Outdoor and water sports
equipment

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EUROPEAN STANDARD
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September 2006

ICS

Will supersede EN 13089:1999

English Version

**Mountaineering equipment - Ice-tools - Safety requirements and
test methods**

Equipements d'alpinisme et d'escalade - Outils à glace -
Exigences de sécurité et méthodes d'essai

Bergsteigerausrüstung - Eisgeräte - 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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Contents

Page

Foreword.....	3
Introduction	4
1 Scope	5
2 Normative references	5
3 Terms and definitions	5
4 Safety requirements	6
5 Test methods.....	7
6 Marking	13
7 Information to be supplied by the manufacturer.....	13
Annex A (informative) Bibliography	14
Annex ZA (informative) Relationship between this European Standard and the Essential Requirements of EU Directive 89/686/EEC.....	15

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Foreword

This document (prEN 13089:2006) 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 13089:1999.

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

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Introduction

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

This 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 ice-tools for use in mountaineering including climbing.

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 — Tape — Safety requirements and test methods*

3 Terms and definitions

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

3.1

ice-tool

hand held tool intended for movement on snow and/or ice which can be used as an anchor point. It comprises at least a shaft and a pick (see Figure 1)

3.2

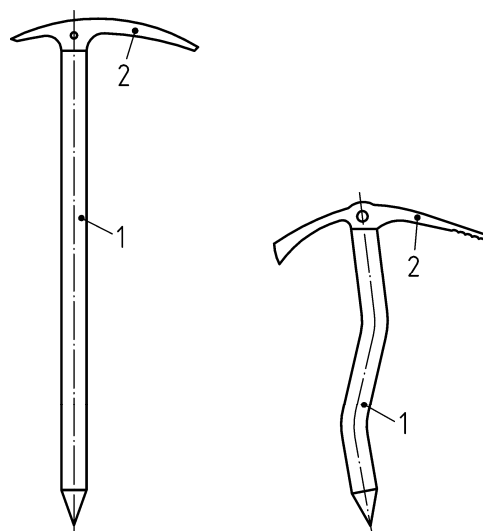
technical ice-tool (type T)

ice-tool intended for use when climbing steep ice

3.3

basic ice-tool (type B)

ice-tools other than technical ice-tools



Key

- 1 Shaft of the ice-tool
- 2 Pick of the ice-tool

Figure 1 — Main parts of an ice-tool

4 Safety requirements

4.1 General

Unless otherwise stated, the following requirements apply to both types of ice-tools.

4.2 Edges

All edges of the ice-tool with which the user's hands can come into contact shall be free from burrs.

4.3 Shaft strength

When tested in accordance with 5.3.3, on removal of the load from the shaft the permanent deformation at the point of application of the load shall not exceed 3 mm or the calculated f_k value.

4.4 Strength in the load direction YY

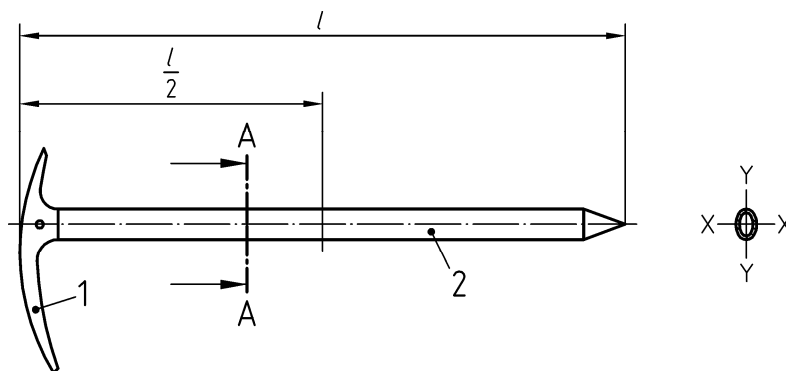
When tested in the load direction YY (see Figure 2) in accordance with 5.3.4,

- a) the test sample shall not break;
- b) no component part of the test sample shall work loose.

4.5 Strength in the load direction XX

When tested in the load direction XX (see Figure 2) in accordance with 5.3.5,

- a) the shaft shall not break;
- b) no component part of the test sample shall work loose;
- c) the permanent deformation at the point of application of the load shall not exceed 10 mm after removal of the load.



Key

- 1 Pick
- 2 Shaft
- XX/YY Load directions

Figure 2 — Load directions XX and YY

4.6 Flat pick strength

When tested in accordance with 5.3.6,

- a) the test sample shall not break;
- b) no component part of the test sample shall work loose;
- c) the permanent deformation at the point of application of the force shall not exceed 70 mm or the calculated f_k value after removal of the force.

4.7 Fatigue performance of type T ice-tool picks

4.7.1 Flat picks

When tested in accordance with 5.3.7.1,

- a) the test sample shall not break;
- b) no component part of the pick shall work loose.

4.7.2 Circular and semicircular picks

When tested in accordance with 5.3.7.2,

- a) the test sample shall not break;
- b) no component part of the pick shall work loose.

5 Test methods

5.1 Preparation of test samples

For the strength tests 5.3.3 to 5.3.6 the test samples shall be conditioned for at least 1 h at $(-30 \pm 5)^\circ\text{C}$. The tests shall be carried out at $(23 \pm 5)^\circ\text{C}$. Each test shall begin within 3 min from removal from conditioning.

5.2 Apparatus

For the tests 5.3.3 to 5.3.6 use a tape in accordance with EN 565 with a width of (15 ± 2) mm.

5.3 Procedure

5.3.1 Test sample

Carry out each test on a test sample not previously subjected to any load.

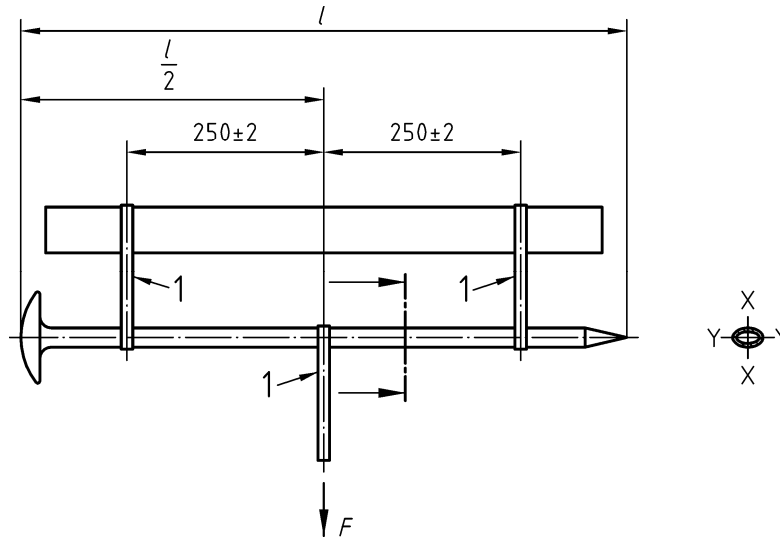
5.3.2 Edges

Check by visual and tactile examination that the requirements of 4.2 are met.

5.3.3 Shaft strength

Support the shaft horizontally and load it in the direction XX as shown in Figure 3.

Dimensions in millimetres



Key
1 Tape

Figure 3 — Testing of shaft strength

If the ice-tool is long enough, arrange the tapes as shown in Figure 3 with the load applied at the mid length of the ice-tool.

Apply a force of

$$F = (2\,500 + 125/-0) \text{ N for type B ice-tools,}$$

$$F = (3\,500 + 175/-0) \text{ N for type T ice-tools,}$$

without shock and maintain for $(60 \pm 5) \text{ s}$.

If the ice tool is not long enough, reduce the 250 mm to " l_k ". Then calculate the force F_k to be applied as follows:

$$F_k = F \times 250/l_k$$

Calculate the maximum permissible permanent deformation f_k in mm as follows:

$$f_k = 3 \times (l_k/250)^2$$

where

l_k is the distance in mm from the middle of the shaft to the middle of the outer tapes, being positioned at the ends of the shaft

During the test, according to the shape of the shaft, the ice-tool may turn. If so, carry out the test in the stable position attained after rotation. For a straight shaft rotation shall be prevented.