SLOVENSKI STANDARD

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Gorniška oprema - Ledni vijaki - Varnostne zahteve in preskusne metode

Mountaineering equipment — Ice anchors — Safety requirements and test methods

Bergsteigerausrüstung - Verankerungsmittel im Eis - Sicherheitstechnische Anforderungen und Prüfverfahren

Equipement d'alpinisme et d'escalade - Broches a glace - Exigences de sécurité et méthodes d'essai

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EUROPEAN STANDARD

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English Version

Mountaineering equipment - Ice anchors - Safety requirements and test methods

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

Bergsteigerausrüstung - Verankerungsmittel im Eis - Sicherheitstechnische Anforderungen und Prüfverfahren

This European Standard was approved by CEN on 9 June 2007.

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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 Management Centre has the same status as the official versions.

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Foreword

This European Standard (EN 568:2007) has been prepared by the Technical Committee CEN/TC 136 “Sports, playground and other recreational 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of an identical text or by endorsement, at the latest by January 2008, and conflicting national standards shall be withdrawn at the latest by January 2008.

This document supersedes EN 568:1997.

This European Standard 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 European 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, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

Introduction

The text of this European Standard is based on the former UIAA-Standard Q (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.

1 Scope

This European Standard specifies safety requirements and test methods for ice anchors, i.e. ice screws and ice pitons for use in mountaineering including climbing.

2 Terms and definitions

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

2.1
ice anchor
general term for ice screws and ice pitons

2.2
ice screw
anchor which is screwed into the ice and is screwed out again after use

2.3
ice piton
anchor which is hammered into the ice and is removed again after use

2.4
placement length
l
length of the anchor from its end to the part of the eye/connector hole intended to be in contact with the ice after it has been screwed or hammered in (see Figure 1)

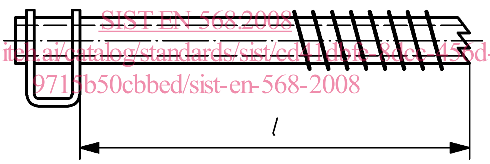


Figure 1 — Placement length, l

2.5
initial torque
maximum torque necessary for achieving the first revolution of the ice screw

3 Safety requirements

3.1 Design

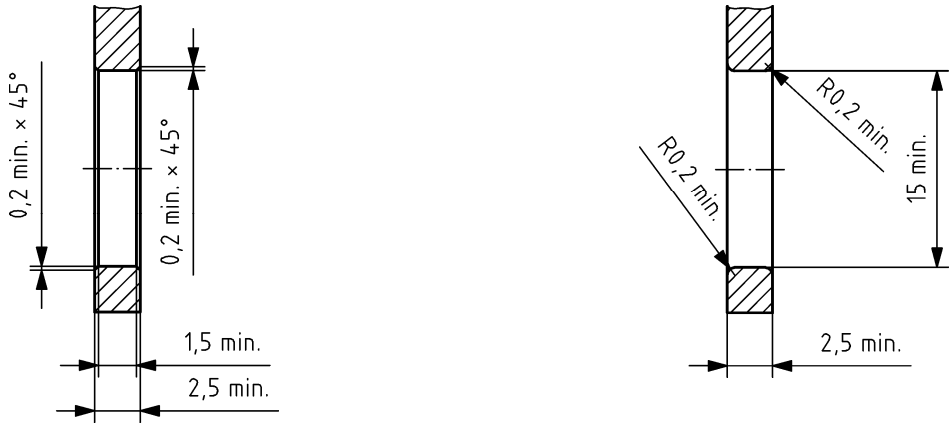
3.1.1 Ice screws shall consist of a cylindrical or semi-cylindrical hollow body with thread. At the screw head, there is an eye into which a connector can be clipped.

Ice pitons shall consist of a cylindrical or semi-cylindrical hollow body and have an eye into which a connector can be clipped.

3.1.2 The head and the eye shall be free from burr and sharp edges.

The internal edges of the eye shall be rounded with a radius larger than 0,2 mm or larger than 0,2 mm × 45°. See a) in Figure 2.

Dimensions in millimetres



a) Bevelled edges

b) Rounded edges

Figure 2 — 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. See b) in Figure 2.

3.2 Resistance to hammering of ice pitons

When tested in accordance with 4.2.4.1, ice pitons shall not show any deformation likely to affect safety e.g. cracks, or separation of components. The impact area of the head shall remain sufficiently intact so as to allow further hammering.

NOTE Mushrooming, as occurs with chisels, is not considered detrimental.

3.3 Screwability of the ice screws

When tested in accordance with 4.2.4.2 after a maximum of 10 full rotations of the ice screw the penetration of the following rotation shall be equal to the pitch of the thread of the ice screw.

3.4 Resistance to fracture and holding force

3.4.1 When tested in accordance with 4.2.4.3.1, anchors shall withstand a force of at least 10 kN in the radial direction, without being pulled out of the ice or breaking.

NOTE Permanent deformation during the test is permitted.

3.4.2 When tested in the axial direction in accordance with 4.2.4.3.2 ice anchors shall withstand a force of at least 5 kN without the hanger breaking or becoming detached.

4 Test methods

4.1 Examination of design

Test the requirements specified in 3.1 by tactile and visual examination and measurement.

4.2 Determination of resistance of hammering of ice pitons, screwability of the ice screws and resistance to fracture and holding force of ice anchors

4.2.1 Test samples

Carry out the test on four ice screws or four ice pitons according to Table 1.

Table 1 — Number of test samples

Type of ice anchor	Number of samples for testing according to			
	4.2.4.1	4.2.4.2	4.2.4.3.1	4.2.4.3.2
Ice piton	1 (largest length)[b]	0	3 (shortest length)[b]	0
Ice screw	0	1[a]	3 (shortest length)[b]	1

[a] After being tested according to 4.2.4.2, the ice screw is used for the test according to 4.2.4.3.2.

[b] If anchors of different length, but otherwise same design, are available.

4.2.2 Apparatus

4.2.2.1 Ice blocks

4.2.2.2 Steel ice container of the following dimensions:

minimum length	350 mm	internal dimensions
minimum width	220 mm	
minimum depth	330 mm	
minimum wall thickness	6 mm	

The base of the ice container shall be rigid so that it does not influence the test results.

4.2.2.3 A vertically guided falling body of mass (10 ± 0,002) kg and an impact area of hardness, HV (40) = (800 ± 10) %.

4.2.2.4 A device as shown in Figure 3 to hold a shaft at right angles to the ice surface, the lower end of the shaft having a clamping mechanism for an ice screw, which holds the screw concentrically. A lever is fitted to the top of the shaft for screwing in the ice screw.