



# SLOVENSKI STANDARD

## SIST EN 13277-2:2001

01-april-2001

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### Varovalna oprema za borilne športe - 2. del: Dodatne zahteve in preskusne metode za ščitnike za nart, ščitnike golen in ščitnike za podlaket

Protective equipment for martial arts - Part 2: Additional requirements and test methods for instep protectors, shin protectors and forearm protectors

Schutzausrüstung für den Kampfsport - Teil 2: Zusätzliche Anforderungen und Prüfverfahren für Spannschützer, Schienbeinschützer und Unterarmschützer

Équipement de protection pour les arts martiaux - Partie 2: Exigences et méthodes d'essai complémentaires relatives aux protege-cou-de-pieds, aux protege-tibias et aux protege-avant-bras

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**Ta slovenski standard je istoveten z: EN 13277-2:2000**

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#### **ICS:**

13.340.10	Varovalna obleka	Protective clothing
97.220.30	Oprema za dvoranske športe	Indoor sports equipment

**SIST EN 13277-2:2001**

**en**

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EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**EN 13277-2**

August 2000

ICS 13.340.10

English version

**Protective equipment for martial arts - Part 2: Additional requirements and test methods for instep protectors, shin protectors and forearm protectors**

Équipement de protection pour les arts martiaux - Partie 2: Exigences et méthodes d'essai complémentaires relatives aux protège-cou-de-pieds, aux protège-tibias et aux protège-avant-bras

Schutzausrüstung für den Kampfsport - Teil 2: Zusätzliche Anforderungen und Prüfverfahren für Spannschützer, Schienbeinschützer und Unterarmschützer

This European Standard was approved by CEN on 5 August 2000.

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.

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 Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

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

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

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**Foreword**

This European Standard has been prepared by Technical Committee CEN/TC 162 "Protective clothing including hand and arm protection and lifejackets", 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 February 2001, and conflicting national standards shall be withdrawn at the latest by February 2001.

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(s).

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, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

It is one of a series covering requirements and test methods for protective equipment used in martial arts.

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## 1 Scope

This European Standard specifies additional requirements and test methods for instep protectors, shin protectors and forearm protectors used in unarmed martial arts such as taekwondo, karate, kick-boxing and similar disciplines.

For general requirements and test methods for protective equipment for martial arts see EN 13277-1.

## 2 Normative references

This European Standard incorporates, by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references, the latest edition of the publication referred to applies (including amendments).

EN 13277-1 : 2000.

Protective equipment for martial arts – Part 1: General requirements and test methods

## 3 Terms and definitions

For the purposes of this European Standard the terms and definitions given in EN 13277-1 apply:

## 4 Requirements

### 4.1 Sizing

The manufacturer shall indicate in centimetres the range of the wearer's height for which this protector is designed.

### 4.2 Combinations

Instep protectors, shin protectors and forearm protectors can be used in combination or together with other protectors for martial arts.

In the case of combined use, the requirements specified for the individual protectors are also to apply.

Possible combinations shall be indicated in the information supplied by the manufacturer.

If combined use is not permitted by the manufacturer, this restriction shall be indicated in the information supplied by the manufacturer.

### 4.3 Restraint

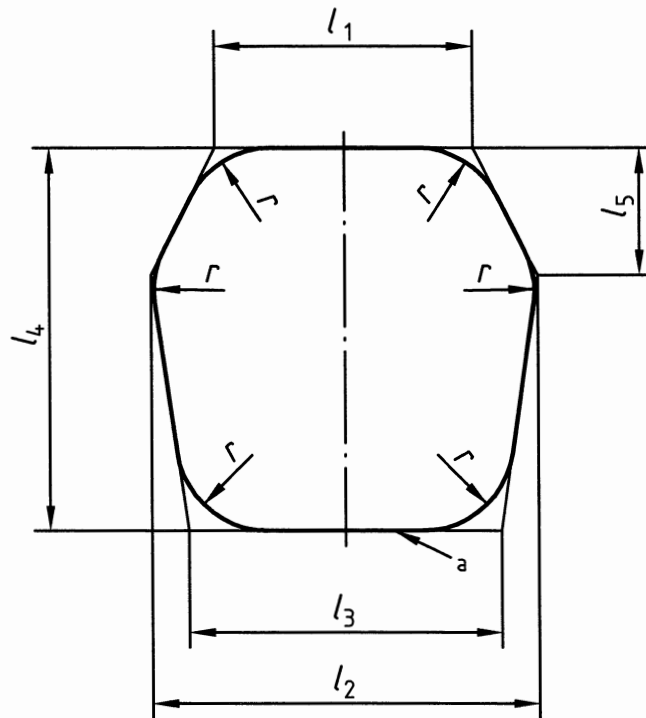
A restraint system shall be supplied by the manufacturer which enables the user to attach instep protectors, shin protectors and forearm protectors without any assistance.

If an instep protector is inseparately connected to a shin protector, secure attachment of the instep protector shall be provided by attaching the instep protector and the shin protectors.

### 4.4 Zone of protection

#### 4.4.1 Instep protectors

Dimensions of the zone of protection see Figure 1 and Table 1.

**Key**

<sup>a</sup> edge of the instep protector which is turned to the toes

**Figure 1 - Location of the zone of protection of instep protectors****Table 1 - Zone of protection of instep protectors**

Dimensions in millimetres

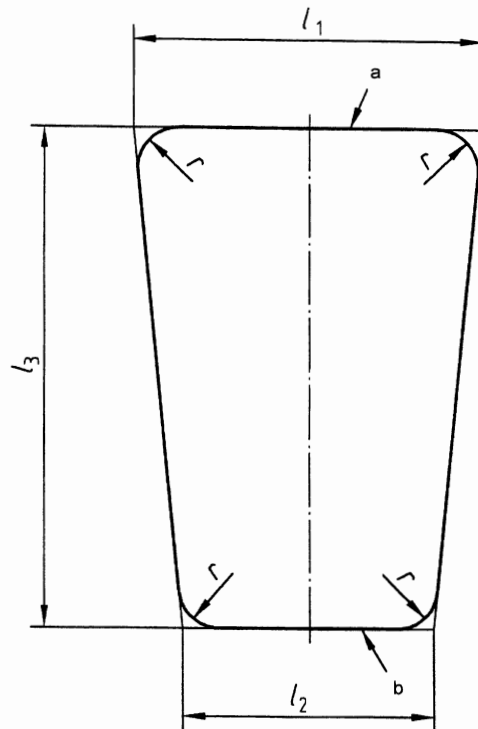
Wearer's height	$l_1$	$l_2$	$l_3$	$l_4$	$l_5$	$r$
	min.	min.	min.	min.		
< 1 340	60	80	70	80	$l_5$ is corresponding with a third of $l_4$	25
from 1 340 to 1 520	65	90	75	90		
from 1 520 to 1 700	70	105	85	105		
from 1 700 to 1 880	80	120	100	120		
> 1 880	90	130	110	130		

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**4.4.2 Shin protectors**

Zone of protection see Figure 2.

The dimensions of the zone of protection are specified in Table 2.

**Key**

a top  
b bottom

**Figure 2 - Location of the zone of protection of shin protectors and forearm protectors****Table 2 - Zone of protection of shin protectors**

Dimensions in millimetres

Wearer's height	$l_1$	$l_2$	$l_3$	$r$
	min.	min.	min.	max.
< 1 340	120	85	180	15
from 1 340 to 1 520	140	100	200	17
from 1 520 to 1 700	160	115	230	19
from 1 700 to 1 880	180	130	270	21
> 1 880	200	150	300	23

#### 4.4.3 Forearm protectors

Zone of protection see Figure 2.

The dimensions of the zone of protection are specified in Table 3.

**Table 3 - Dimensions of the zone of protection of forearm protectors**

Dimensions in millimetres

Wearer's height	$l_1$ min.	$l_2$ min.	$l_3$ min.	$r$ max.
< 1 340	90	60	140	11
from 1 340 to 1 520	105	70	160	13
from 1 520 to 1 700	120	85	180	15
from 1 700 to 1 880	140	100	200	17
> 1 880	160	115	230	19

#### 4.5 Impact performance

Instep protectors, shin protectors and forearm protectors comply with this standard if the worst result after testing in accordance with 5.5 meets the requirements of Table 4.

Table 4 defines the kinetic energy of a striker (see EN 13277-1 : 2000, 5.6) and the maximum peak force measured in accordance with 5.5 shall be less than that shown in Table 4.

Table 4 also lists the minimum number of different positions within the zone of protection to be tested. Before testing those positions shall preferably be selected, where the worst test results are assumed to be likely.

**Table 4 - Impact performance requirements**

Protector	Minimum number of positions to be tested	Impact energy of the striker J	Peak force kN max.
Instep protectors	2	3	2
Shin protectors	3	3	2
Forearm protectors	3	3	2

## 5 Testing

### 5.1 Sampling

See EN 13277-1 : 2000, 5.1 <https://standards.iteh.ai/catalog/standards/sist/285cd307-34cb-493c-af1b-7e0e73f97a77/sist-en-13277-2-2001>

### 5.2 Conditioning

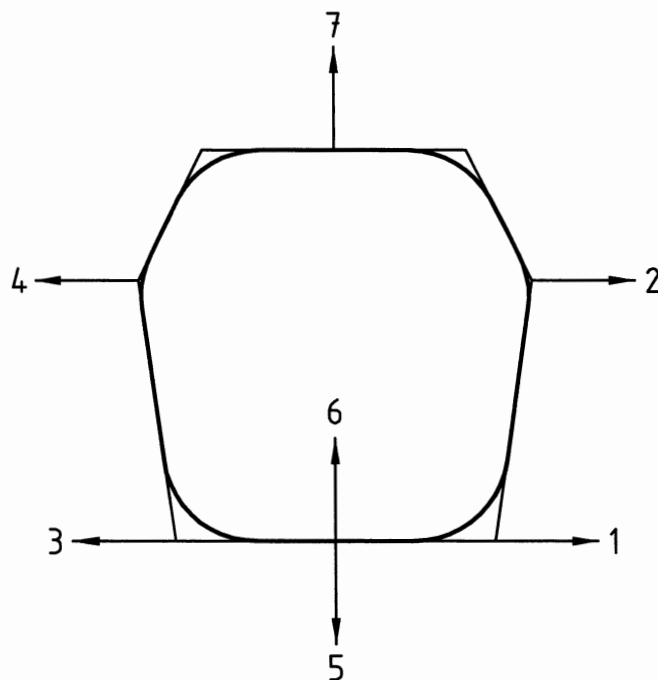
See EN 13277-1 : 2000, 5.2

### 5.3 Restraint

Restraint testing shall be carried out as defined in EN 13277-1:2000, 5.4. When testing the restraint the protector(s) shall be attached to the appropriate part of the body of a test person of an appropriate height.



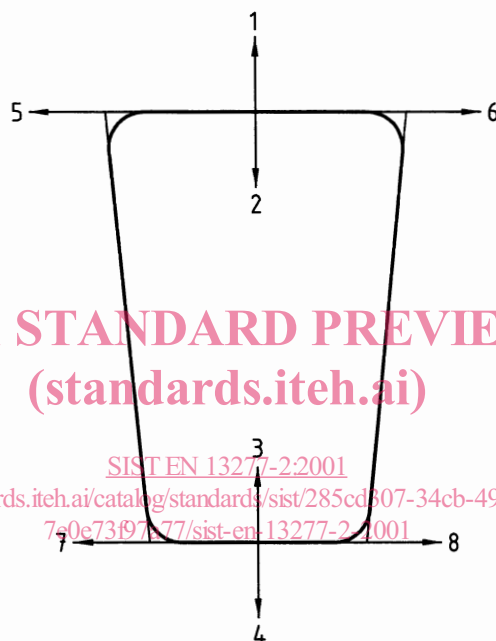
A test force of 20 N shall be applied at the edge of the zone of protection, in the directions and in the order shown in Figures 3 and 4, tangential to the surface of the body of the test person.



**Key**

1 to 7 Directions and order of the tests

**Figure 3 - Restraint test of instep protectors**



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**Key**

1 to 8 Directions and order of the tests

**Figure 4 - Restraint test of shin protectors and forearm protectors**