



# SLOVENSKI STANDARD

## SIST EN 381-7:2000

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### Varovalna obleka za uporabnike ročnih verižnih žag – 7. del: Zahteve za zaščitne rokavice za uporabnike verižnih žag

Protective clothing for users of hand-held chainsaws - Part 7: Requirements for chainsaw protective gloves

Schutzkleidung für Benutzer von handgeführten Kettensägen - Teil 7: Anforderungen an Schutzhandschuhe für Kettensägen

Vêtements de protection pour utilisateurs de scies à chaîne tenues à la main - Partie 7: Exigences pour les gants de protection contre les scies à chaîne

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Ta slovenski standard je istoveten z: **EN 381-7:1999**

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13.340.40      Varovanje dlani in rok      Hand and arm protection

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EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**EN 381-7**

July 1999

ICS 13.340.10

English version

## Protective clothing for users of hand-held chainsaws - Part 7: Requirements for chainsaw protective gloves

Vêtements de protection pour utilisateurs de scies à chaîne  
tenues à la main - Partie 7: Exigences pour les gants de  
protection contre les scies à chaîne

Schutzkleidung für Benutzer von handgeführten  
Kettensägen - Teil 7: Anforderungen an Schutzhandschuhe  
für Kettensägen

This European Standard was approved by CEN on 19 May 1999.

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

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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.

The European Standards for "Protective clothing for users of hand held chainsaws" are the following:

EN 381-1	Protective clothing for users of hand held chainsaws - Part 1: Test rig for testing resisted cutting by a chainsaw
EN 381-2	... - Part 2: Test rig for leg protection
EN 381-3	... - Part 3: Test methods for footwear
EN 381-4	... - Part 4: Test method for chainsaw protective gloves
EN 381-5	... - Part 5: Requirements for leg protectors
EN 381-7	... - Part 7: Requirements for chainsaw protective gloves
EN 381-8	... - Part 8: Test methods for chainsaw protective gaiters
EN 381-9	... - Part 9: Requirements for chainsaw protective gaiters

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 2000, and conflicting national standards shall be withdrawn at the latest by January 2000.

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.

## Introduction

This European Standard forms part of a series concerned with personal protective equipment designed to protect against the risks arising from the use of hand-held chainsaw. As far as is known all chainsaws are designed for right handed use and therefore all protective clothing designs and requirements have assumed right handed use. Protection can not be adequate for left handed use.

No protective equipment can ensure 100% protection against cutting by a hand-held chainsaw.

Nevertheless, experience has shown that it is possible to design protective equipment which offers a certain degree of protection.

Different functional principles can be applied in order to give protection.

These include:

- chain slipping: on contact the chain does not cut the material;
- clogging: fibres are drawn with the chain into the drive sprocket and block chain movement;
- chain braking: fibres have a high resistance to cutting and absorb rotational energy, thereby reducing the chain speed.

Often more than one principle is applied.

## 1 Scope

This European Standard specifies the requirements for gloves for resistance to cutting by a chainsaw when assessed by the test method described in EN 381-4. The requirements are also given for marking and for the provision of information to be supplied by the manufacturer including criteria for the selection of appropriate gloves, and instructions for use.

## 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 amendments or revision. For undated references the latest edition of the publication referred to applies.

EN 381-4:1999	Protective clothing for users of hand-held chainsaw - Part 4: Test method for chainsaw protective gloves
EN 381-5:1995	Protective clothing for users of hand-held chainsaw - Part 5: Requirements for leg protectors
EN 420:1994	General requirements for gloves
EN 388:1994	Protective gloves against mechanical risks

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## 3 Definitions

For the purposes of this European Standard, the following definitions shall apply:

### 3.1 chainsaw protective glove

any product which protects a hand against cutting by a hand-held chainsaw.

### 3.2 cuff

the portion of a glove which covers the wrist.

### 3.3 metacarpus

the part of the hand between the wrist and the fingers.

### 3.4 five-finger glove

any glove covering both the back and the palm of the hand and wrist, and having separate individual fingers and thumb.

### 3.5 mitt

any glove covering both the back and the palm of the hand and wrist, and having a separate thumb and a common covering for the fingers.

### 3.6 one-finger mitt

any glove covering both the back and palm of the hand and wrist, and having a separate thumb and a separate forefinger and a common covering for the remaining fingers.

### 3.7 protective material

material which is designed to protect the wearer against the cutting effect of a hand-held chainsaw. This protective material may include the cloth of the garment.

### 3.8 protective coverage

the area of the glove which is covered by protective material.

### 3.9 specified protective area

the required protective coverage.

## 4 Designs

### 4.1 Designs of gloves

This standard defines two designs of chainsaw protective gloves, design A and design B. Design A and design B have different specified protective areas as defined in 4.2 and 4.3.

### 4.2 Design A

#### 4.2.1 Description of design A

Design A applies to five-finger gloves without chainsaw protection in the fingers or thumb.

#### 4.2.2 Specified protective area for design A - Left hand gloves

The specified protective area is shown in figure 1. It is the back of the metacarpus.

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The minimum length of the protective material across the minimum required width of protective material in size 9 gloves shall be 120 mm. The distal edge of the protective material shall be not more than 8 mm from the crotches between digits 2 and 3, 3 and 4, or 4 and 5. The minimum width of the protective material throughout a length equal to the minimum required length of protective material for size 9 gloves shall be a 110 mm. The minimum lengths and widths of protective material in other sizes of gloves shall be calculated from the hand lengths and widths in table 1 of EN 420:1994. The dimensions shall be measured on one glove from each pre-treatment in accordance with clause 6 of EN 381-4:1999.

#### 4.2.3 Protective coverage for design A - Right hand gloves

No protective coverage is required. If protection is offered, however, then it shall at least equal that specified for the left hand.



### 4.3 Design B

#### 4.3.1 Description of design B

Design B is protective gloves or mitts with specific chainsaw protection as in design A and on the backs of the fingers, but not on the thumb.

#### 4.3.2 Specified protective area for design B - Left hand gloves

The specified protective area is shown in figure 2 and is the entire back of the hand including the backs of all fingers, but excluding the thumb.

The minimum length of protective material across the minimum required width of protective material in size 9 gloves shall be 190 mm. The minimum width of protective material throughout a length equal to the minimum required length of protective material for size 9 gloves shall be 110 mm. The minimum lengths and widths for protective material in other sizes of gloves shall be calculated from the hand lengths and widths in table 1 of EN 420:1994. The dimensions shall be measured on one glove from each pre-treatment in accordance with clause 6 of EN 381-4:1999.

#### 4.3.3 Protective coverage for design B - Right hand gloves

No protective coverage is required. If protection is offered, however, then the coverage shall at least equal that specified for the left hand.

### 4.4 Attachment of protective material

Where the glove is not made entirely of protective material, all the protective materials used shall be sewn or otherwise permanently attached to the remainder of the glove.

## 5 Performance requirements

### 5.1 General

All chainsaw protective gloves shall conform to the requirements of EN 420, shown in table 1.

Table 1: General requirements

Subclauses in EN 420:1994	Mandatory	Optional
4.1 Design principle	X	
4.2 Glove construction	X	
4.3 High visibility gloves		X
4.4 Innocuousness	X	
4.5 Cleaning		X
5.1 Sizing	X	
5.2 Dexterity		X
5.3 Water vapour transmission and absorption		X

### 5.2 Protection against general mechanical risks

Both left and right hand gloves shall conform to the following requirements taken from EN 388:1994, modified as noted.

**Table 2: Performance requirements - Mechanical risks.**

Test	Test method	Minimum requirement (Performance level) table 1 of EN 388:1994
Abrasion resistance	6.1 of EN 388:1994	2 <sup>1)</sup>
Blade cut resistance	6.2 of EN 388:1994	1
Tear resistance	6.3 of EN 388:1994	2
Puncture resistance	6.4 of EN 388:1994	2

<sup>1)</sup> The abrasion test is only carried out on material taken from the outer layer(s) of the glove; not on the chainsaw protective material.

### 5.3 Protection against chainsaw cutting

#### 5.3.1 Classification according to chain speed

Protection against chainsaw cutting shall be assessed in accordance with clauses 7 and 8 of EN 381-4:1999 with one of the following chainsaw speed classes designated as follows:

- class 0 : 16 m/s
- class 1 : 20 m/s
- class 2 : 24 m/s and
- class 3 : 28 m/s

#### 5.3.2 Requirements for cut resistance

When tested according to clause 8 of EN 381-4:1999 no cut through is allowed in any tested specimen.

### 5.4 Ergonomic requirements

When tested according to clause 9 of EN 381-4:1999 the grip factor shall be bigger than 80.

## 6 Marking

Protective gloves for users of hand-held chainsaws shall be durably marked at least with the following information:

- a) name or trade mark or other means of identification of the manufacturer or legally responsible company;
- b) designation or style number (company identification of model);
- c) design according to clause 4;
- d) the number EN 381-7;
- e) size designation according to EN 420;
- f) speed classification. This information shall be given outside the frame of the pictogram showing a chain saw, preferably on the bottom of the frame.

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## 7 Information supplied by the manufacturer

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Chainsaw protective gloves shall be supplied with an unambiguous instruction in the language(s) of the country of destination. The instruction shall contain at least the following information:

- name, address and telephone number of manufacturer/importer;
- type designation or style number;
- figure showing the protective coverage applicable to any left hand glove and to the related right hand glove when applicable, with the related class;
- cleaning instructions;
- size designation according to EN 420;
- criteria for discarding the garment;
- the text "Does not offer protection against all risks of cutting by a hand-held chainsaw" or similar;
- the text "The chainsaw shall be used correctly using both hands according to the instructions from the chainsaw manufacturer";
- the information given in the marking;



- instructions for correct use;
- instructions about repair of the garment especially pointing out that the protective material cannot be repaired;
- instruction that the protective area and material shall not be altered in any way and that once cut into, the garment should be discarded.
- instruction that the colour and other specifications shall be as for clothing (see clause 9 of EN 381-5:1995).

## 8 Pictogram

Chainsaw protective gloves fulfilling this standard shall be marked with the pictogram shown in figure 3. The pictogram shall either be printed on the outside of the glove or, if incorporated as part of a label, this shall be sewn to the inside of the glove.

It shall have minimum size 30 mm x 30 mm.

In cases where only one glove of a pair offers chainsaw protection, only that glove which offers the protection shall carry the pictogram.

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