



SLOVENSKI STANDARD
SIST EN 381-11:2003

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Protective clothing for users of hand-held chainsaws - Part 11: Requirements for upper body protectors

Schutzkleidung für die Benutzer von handgeführten Kettensägen - Teil 11:
Anforderungen an Oberkörperschutzmittel

Vêtements de protection pour utilisateurs de scies à chaîne tenues à la main - Partie 11:
Exigences relatives aux vestes de protection

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ICS:

13.340.10 Varovalna obleka Protective clothing

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ICS 13.340.10

English version

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Kettensägen - Teil 11: Anforderungen an
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This European Standard was approved by CEN on 10 August 2002.

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 Management Centre 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 Management Centre 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, Malta, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

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Foreword

This document (EN 381-11:2002) 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of an identical text or by endorsement, at the latest by May 2003, and conflicting national standards shall be withdrawn at the latest by May 2003.

This document 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 document.

In this European Standard the Annex A is informative.

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, Malta, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

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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 chainsaws.

Accidents occur due to a number of complex reasons, but a common factor is incorrect use of the chainsaw. The importance of correct training and proper use of a chainsaw in preventing accidents cannot be underestimated.

In some countries chainsaw users adopt working practices, which together with training makes the use of upper body protectors unnecessary. These usually include the instruction to hold the chainsaw with both hands and to use the chain brake if it becomes necessary to stop cutting. It is often found that for ergonomic reasons it is impractical to protect the upper body.

All parts of the upper body have been shown to be at risk when using a chainsaw.

In this European standard, specifications for the protective coverage and performance of the upper body protectors are given. No personal protective equipment can ensure a 100% protection against cutting from a hand-held chainsaw.

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

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

These include:

- a) chain slipping: on contact the chain does not cut the material;
- b) clogging: fibres are drawn by the chain into the drive sprocket and block chain movement;
- c) 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 in chainsaw protective clothing. Upper body protectors meeting this standard are meant to be used whilst working off the ground, and where risk assessment shows that there is a significant risk to be cut by the moving chain on the upper part of the body such as when working from a sky lift and carrying out tree surgery.

1 Scope

This Part of this European Standard, specifies requirements for the protection offered by upper body protectors against cutting by a hand-held chainsaw assessed by the test methods given in EN 381-10:2002. The requirements relating to ergonomic properties, identification, marking and information supplied by the manufacturer including selection criteria and instructions for use are also specified.

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 340, *Protective clothing — General requirements*

EN 381-10:2002, *Protective clothing for users of hand-held chainsaws — Part 10: Test method for upper body protectors.*

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3 Terms and definitions

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

3.1

upper body protector

any type of protective garment, which protects at least the specified area to the level of resistance to cutting by a chainsaw specified within this standard for the upper part of the body, e.g. jacket

3.2

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

3.3

protective coverage

area of the garment which consists of protective material

3.4

specified protective area

required protective coverage defined in this standard

3.5

top of shoulder

top of shoulder as shown in figure 1

4 Requirements

4.1 General

Upper body protectors for chainsaw users shall meet an overall requirement that they are safe and fit for the purpose. They shall meet requirements 4.2 to 4.7 of this standard.

4.2 Innocuousness

Upper body protectors for chainsaw users shall be designed and manufactured to provide protection when used according to the manufacturer's instructions, without endangering the user or others. Construction materials and incorporated substances, shall meet the innocuousness requirements in EN 340. They shall not endanger those coming into contact with them. The manufacturer shall list in the Information Supplied by the Manufacturer the names and concentrations of all substances contained in the product, which are generally known to cause allergies or sensitisation. Upper body protectors for chainsaw users shall be free of hard or sharp components and rough surfaces, that could cause abrasion, bruising, irritation, punctures or cuts to a user coming into contact with them. The manufacturer shall give guidance on the safe destruction and disposal of the products and of any hazards that can arise during mechanically disrupting or incinerating the product.

4.3 Ergonomic requirements

The protective clothing should be as lightweight as possible.

The design shall be without appendages, which can become entangled in machinery or the undergrowth.

The construction around the sleeve shall facilitate bending and lifting the arm.

The water vapour resistance of the garment outside the specific protected area shall be no more than 5 (m²Pa/W) when tested according to 10.1 in EN 381-10:2002.

The protective garments shall be designed to minimise discomfort and impediment while wearing them. When tested according to 10.2 and 10.3 in EN 381-10:2002 the mean score of all subjects shall be less than 1,5.

4.4 Specified minimum protective area for upper body protectors

a) front: see Figure 1:

The specified protective area shall cover the front of the garment from the top of the shoulder downwards for a distance equivalent to at least 25 % of the chest girth of the largest intended user as given in the marking. The protective area shall include the superior 80 % of the surface of the front of the sleeve down to within 70 mm of the distal edge of the cuff of the sleeve;

b) back: see Figure 2:

The protective area shall cover the top of the shoulders plus the superior 40 % of the surface of the back of the sleeve down to within 70 mm of the distal edge of the cuff of the sleeve.

A gap is permitted in the protective material in the centre of the back. The dimensions of the gap, l_5 and l_6 , are shown in Figure 2. l_5 shall be less than 9 % of the chest girth of the smallest intended user of the garment, as given in the marking, and l_6 shall be less than 35 % of the chest girth of the smallest intended user of the garment;

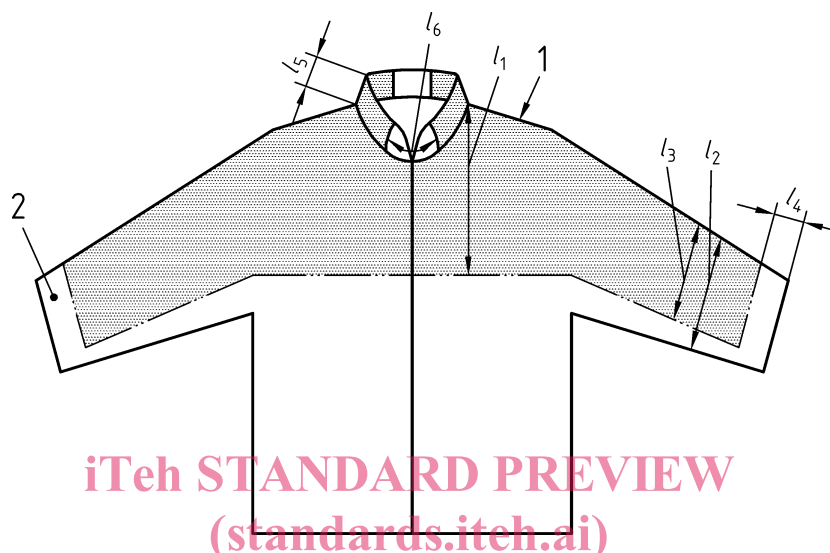
c) Collar (optional) see Figures 1 and 2:

If a protective collar is fitted, the protective area shall cover a minimum length of 100 mm on each side of the neck. A gap in the protective material at the centre front of a maximum of 80 mm is permitted and a gap in the protective material at the centre back of a maximum of 80 mm is also permitted. The height of the protective material shall be a minimum of 30 mm;

d) Fastenings/joins:

The garment may have a closure down the centre front to facilitate donning and removal. When the garment is fastened, the gap between the edges of the protective material shall be no more than 30 mm. The gap in the protective material at the join between the main body of the garment and the collar shall be less than 8 mm.

The protective coverage shall be measured in accordance with clause 7 of EN 381-10:2002.

**Key**

1 Top of Shoulder

2 Cuff

 l_1 Minimum height of protective coverage at the front of the garment l_2 Width of sleeve l_3 Width of protective coverage on the front of the sleeve (minimum 80 % of l_2) l_4 Unprotected cuff, width less than 70 mm l_5 Height of protective coverage in collar, Minimum of 30 mm l_6 Gap in the protective coverage in the collar, Maximum of 80 mm

Figure 1 — Specified protective area – front of garment