

**Kaitserõivad mootorsae kasutajatele.  
Osa 10: Katsemeetod ülakeha  
kaitsevahenditele**

Protective clothing for users of hand-held chainsaws  
- Part 10: Test method for upper body protectors

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN 381-10:2003 sisaldab Euroopa standardi EN 381-10:2002 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 18.02.2003 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN 381-10:2003 consists of the English text of the European standard EN 381-10:2002.</p> <p>This document is endorsed on 18.02.2003 with the notification being published in the official publication of the Estonian national standardisation organisation.</p> <p>The standard is available from Estonian standardisation organisation.</p>
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<p><b>Käsitlusala:</b> This European Standard, part 10, specifies the procedures for sampling and pre-treatment of upper body protectors intended to provide protection against cutting by hand-held chainsaws, the measurement of the protective coverage, the apparatus and test methods for assessing resistance to cutting, and the practical performance test for evaluating ergonomic properties in relation to part 11 of this standard</p>	<p><b>Scope:</b> This European Standard, part 10, specifies the procedures for sampling and pre-treatment of upper body protectors intended to provide protection against cutting by hand-held chainsaws, the measurement of the protective coverage, the apparatus and test methods for assessing resistance to cutting, and the practical performance test for evaluating ergonomic properties in relation to part 11 of this standard</p>
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**Võtmesõnad:** ins, instructions, manual controls, marking, occupational safety, pedestrian-controlled systems, personnel protective equipment, protective clothing, safety, safety engineering, sawing machines, sawing machines (tools), saws, testing, work clothes, workplace safety

ICS 13.340.10

English version

## Protective clothing for users of hand-held chainsaws - Part 10: Test method for upper body protectors

Vêtements de protection pour utilisateurs de scies à chaîne  
tenues à la main - Partie 10: Méthode d'essai pour vestes  
de protection

Schutzkleidung für die Benutzer von handgeführten  
Kettensägen - Teil 10: Prüfverfahren für  
Oberkörperschutzmittel

This European Standard was approved by CEN on 1 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.

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## Foreword

This document (EN 381-10:2002) has been prepared by the 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 April 2003, and conflicting national standards shall be withdrawn at the latest by April 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.

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.

## 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 chainsaw protective 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 with 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 by users 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 European Standard, part 10, specifies the procedures for sampling and pre-treatment of upper body protectors intended to provide protection against cutting by hand-held chainsaws, the measurement of the protective coverage, the apparatus and test methods for assessing resistance to cutting, and the practical performance test for evaluating ergonomic properties in relation to part 11 of this standard

## 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 381-1:1993, *Protective clothing for users of hand-held chainsaws — Part 1: Test rig for testing resistance to cutting by a chainsaw.*

EN 381-3:1996, *Protective clothing for users of hand-held chainsaws — Part 3: Test methods for footwear.*

EN 381-11:2002, *Protective clothing for users of hand-held chainsaws — Part 11: Requirements for upper body protectors.*

EN ISO 3175:1995, *Textiles — Determination of dimensional change on dry cleaning in perchloroethylene — Machine method.* (ISO 3175:1995)

EN ISO 6330:2000, *Textiles — Domestic washing and drying procedures for textile testing* (ISO 6330: 2000)

EN ISO 13934-2:1999, *Textiles — Tensile properties of fabrics — Part 2: Determination of maximum force using the grab method* (ISO 13934-2:1999)

EN 31092:1993, *Textiles — Determination of physiological properties — Measurement of thermal and water-vapour resistance under steady-state conditions (sweating guarded — hotplate test)* (ISO 11092:1993)

### 3 Terms and definitions

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

#### 3.1

##### **front (of an upper body protector)**

part of a garment covering the forward 50% of the upper body circumference.

#### 3.2

##### **rear (of an upper body protector)**

part of a garment covering the rear 50% of the upper body circumference.

NOTE Depending upon design and construction, and due to many layers of protective material, it may be difficult to establish the division between the front and the rear of an upper body protector. It is nevertheless of great importance to establish this before pre-treatment and testing.

#### 3.3

##### **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.

#### 3.4

##### **unit of protective material**

cut out piece or panel of protective material consisting of all the fabric or other layers that constitute the protective material that go into the construction of a garment. A unit has no seams or joins within it. Units may be joined together to provide the complete protective coverage required, before insertion and attachment to garments, but such units retain their individuality for testing purposes.

## 4 Test methods

### 4.1 General

Measuring instruments unless otherwise specified shall be accurate to  $\pm 2\%$  of the pass/fail level of the characteristic being measured.

For each of the required sequences of measurements performed in accordance with this standard a corresponding estimate of the uncertainty of the final result shall be determined. This uncertainty ( $U_m$ ) shall be given in the test report in the form  $U_m = \pm X$ . It shall be used in determining whether a "Pass" performance has been achieved. If