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Protective clothing for users of hand-held chainsaws —

Part 6: Performance requirements and test methods for upper body protectors

Vêtements de protection pour utilisateurs de scies à chaîne tenues à la main —

Partie 6: Exigences de performance et méthodes d'essai pour protecteurs du haut du corps

Reference number
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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation on the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html.

This document was prepared by the European Committee for Standardization (CEN) Technical Committee CEN/TC 162, *Protective clothing including hand and arm protection and lifejackets*, in collaboration with ISO Technical Committee TC 94, *Personal safety — Personal protective equipment*, Subcommittee SC 13, *Protective clothing*, in accordance with the agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This second edition cancels and replaces the first edition (ISO 11393-6:2007), which has been technically revised. The main changes compared to the previous edition are as follows:

— in the Introduction, the term "hand-held chainsaws primarily constructed for cutting wood" has been added;

— the normative references have been updated;

— the term and definition 3.1 has been added;

— Clause 4 has been revised, design B jackets have been added in 4.5 and an evaluation of the protective insert after pre-treatment with 60 °C and spin-drying has been added in 4.6;

— in Clause 6, the pre-treatment procedure has been revised;

— in Clause 8, the definition has been specified;

— in 9.7, the cut test at the sleeve has been changed;

— in Clause 10, descriptions have been specified and the test procedure has been revised;

— in Clause 11, the test procedure has been revised and a test procedure has been added in 11.3;

— Clauses 12, 13 and 14 have been specified;

— Clause 15 has been revised;

— in Annex A, the definition has been revised.

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A list of all parts in the ISO 11393 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

This corrected version of ISO 11393-6:2018 incorporates the following corrections:

— The arrows on Figures 5 and 6 have been corrected and the colour of shading improved on Figures 1 to 6 and Figure 9 for more readability.

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Introduction

This document forms part of a series concerned with personal protective equipment (PPE) designed to protect against the risks arising from the use of hand-held chainsaws primarily constructed for cutting wood.

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.

All parts of the upper body have been shown to be at risk when using a chainsaw. In this document, specifications for the protective coverage and performance of the upper body protectors are given.

No PPE can ensure a 100 % protection against cutting from a hand-held chainsaw. Nevertheless, experience has shown that it is possible to design PPE 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 in accordance with this document are meant to be used while working off the ground, and where risk assessment shows that there is a significant risk of being 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.

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Protective clothing for users of hand-held chainsaws —

Part 6:
Performance requirements and test methods for upper body protectors

1 Scope

This document specifies the performance requirements, test methods, design requirements, identification and marking information for upper body protectors that offer protection against cutting by hand-held chainsaws.

It also specifies procedures for sampling and pre-treatment of upper body protectors, 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.

Guidance on chainsaw use and the selection of appropriate upper body protectors is given in Annex A.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 5077, *Textiles — Determination of dimensional change in washing and drying*

ISO 7000, *Graphical symbols for use on equipment — Registered symbols*

ISO 11393-1:2018, *Protective clothing for users of hand-held chainsaws — Part 1: Test rig driven by a flywheel for testing resistance to cutting by a chainsaw*

ISO 11393-3:2018, *Protective clothing for users of hand-held chainsaws — Part 3: Test methods for footwear*

ISO 13688:2013, *Protective clothing — General requirements*

ISO 13935-2, *Textiles — Seam tensile properties of fabrics and made-up textile articles — Part 2: Determination of maximum force to seam rupture using the grab method*

3 Terms and definitions

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

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at http://www.electropedia.org/

3.1
cut-through
any visible change on the underside of the innermost layer of the test sample caused by the saw chain

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