

KÄSIKETTSAAGIDE KASUTAJATE KAITSERIIETUS. OSA
6: ÜLAKEHA KAITSEVAHENDITE TOIMIVUSNÕUDED JA
KATSEMEETODID

Protective clothing for users of hand-held chainsaws -
Part 6: Performance requirements and test methods
for upper body protectors (ISO 11393-6:2018,
Corrected version 2019-11)

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN ISO 11393-6:2019 sisaldab Euroopa standardi EN ISO 11393-6:2019 ingliskeelset teksti.	This Estonian standard EVS-EN ISO 11393-6:2019 consists of the English text of the European standard EN ISO 11393-6:2019.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation and Accreditation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 24.07.2019.	Date of Availability of the European standard is 24.07.2019.
Standard on kättesaadav Eesti Standardimis- ja Akrediteerimiskeskusest.	The standard is available from the Estonian Centre for Standardisation and Accreditation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

ICS 13.340.10

Standardite reprodutseerimise ja levitamise õigus kuulub Eesti Standardimis- ja Akrediteerimiskeskusele

Andmete paljundamine, taastekitamine, kopeerimine, salvestamine elektroonsesse süsteemi või edastamine ükskõik millises vormis või millisel teel ilma Eesti Standardimis- ja Akrediteerimiskeskuse kirjaliku loata on keelatud.

Kui Teil on küsimusi standardite autoriõiguse kaitse kohta, võtke palun ühendust Eesti Standardimis- ja Akrediteerimiskeskusega: Koduleht www.evs.ee; telefon 605 5050; e-post info@evs.ee

The right to reproduce and distribute standards belongs to the Estonian Centre for Standardisation and Accreditation

No part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying, without a written permission from the Estonian Centre for Standardisation and Accreditation.

If you have any questions about standards copyright protection, please contact the Estonian Centre for Standardisation and Accreditation: Homepage www.evs.ee; phone +372 605 5050; e-mail info@evs.ee

English Version

Protective clothing for users of hand-held chainsaws - Part
6: Performance requirements and test methods for upper
body protectors (ISO 11393-6:2018, Corrected version
2019-11)

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 (ISO 11393-6:2018, Version corrigée
2019-11)

Schutzkleidung für die Benutzer handgeführter
Kettensägen - Teil 6: Prüfverfahren und
Leistungsanforderungen für Oberkörperschutzmittel
(ISO 11393-6:2018, korrigierte Fassung 2019-11)

This European Standard was approved by CEN on 18 July 2019.

This European Standard was corrected and reissued by the CEN-CENELEC Management Centre on 13 November 2019.

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 CEN-CENELEC 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 CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.



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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

European foreword

This document (EN ISO 11393-6:2019) has been prepared by Technical Committee ISO/TC 94 "Personal safety - Personal protective equipment" in collaboration with 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 January 2020, and conflicting national standards shall be withdrawn at the latest by January 2020.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 381-11:2002 and EN 381-10:2002.

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 the 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, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Endorsement notice

The text of ISO 11393-6:2018, Corrected version 2019-11 has been approved by CEN as EN ISO 11393-6:2019 without any modification.

Annex ZA (informative)

Relationship between this European Standard and the essential requirements of REGULATION (EU) 2016/425 aimed to be covered

This European Standard has been prepared under a Commission's standardization request to provide one voluntary means of conforming to essential requirements of Regulation (EU) 2016/425 on the approximation of the laws of the Member States relating to personal protective equipment.

Once this standard is cited in the Official Journal of the European Union under that Regulation, compliance with the normative clauses of this standard given in Table ZA.1 confers, within the limits of the scope of this standard, a presumption of conformity with the corresponding essential requirements of that Regulation and associated EFTA regulations.

Table ZA.1 — Correspondence between this European Standard and and Regulation (EU) 2016/425

Essential Requirements of REGULATION (EU) 2016/425	Clause(s)/sub-clause(s) of this EN	Remarks/Notes
1.1.1. Ergonomics	4.4	
1.1.2.1. Optimum level of protection	4.4	
1.1.2.2. Classes of protection appropriate to different levels of risk	5	
1.2.1. Absence of inherent risks and other nuisance factors	4.4; 4.5; 4.6; 4.8	
1.2.1.1. Suitable constituent materials	4.2	
1.2.1.2. Satisfactory surface condition of all PPE parts in contact with the user	4.4	
1.2.1.3. Maximum permissible user impediment	4.4	
1.3.1. Adaptation of PPE to user morphology	4.4; 11.1	
1.3.2. Lightness and strength	4.8	
1.4. Manufacturer's instructions and information	13; 15	
2.4. PPE subject to ageing	13 c); 15 q)	

2.12. PPE bearing one or more identification markings or indicators directly or indirectly relating to health and safety	14	
3.3. Protection against mechanical injuries	4.7	

WARNING 1 — Presumption of conformity stays valid only as long as a reference to this European Standard is maintained in the list published in the Official Journal of the European Union. Users of this standard should consult frequently the latest list published in the Official Journal of the European Union.

WARNING 2 — Other Union legislation may be applicable to the product(s) falling within the scope of this standard.

Contents

	Page
Foreword	v
Introduction	vii
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Performance requirements	3
4.1 General.....	3
4.2 Innocuousness.....	3
4.3 Sizing.....	3
4.4 Ergonomic requirements.....	3
4.5 Specified minimum protective area for upper body protectors.....	3
4.5.1 General.....	3
4.5.2 Designs of jackets.....	3
4.5.3 Front design A.....	3
4.5.4 Front design B.....	4
4.5.5 Rear design A and B.....	5
4.5.6 Collar (optional).....	6
4.5.7 Fastenings and joins.....	6
4.6 Dimensional change and other changes.....	6
4.6.1 Dimensional change.....	6
4.6.2 Other changes as a consequence of cleaning.....	7
4.7 Resistance to chainsaw cutting.....	7
4.8 Requirements for the attachment of protective padding and the strength of closures.....	7
5 Classification according to chain speed	7
6 Test methods	7
6.1 General.....	7
6.2 Pre-treatment.....	7
6.2.1 Cleaning.....	7
6.2.2 Pre-treatment for testing the effect of temperature and spinning on the structure of the protective insert.....	8
6.3 Number of test specimens.....	8
6.4 Sizes of test specimens.....	8
6.5 Examination of protective material.....	8
7 Testing for dimensional change	8
8 Checking of protective coverage	9
9 Testing of resistance to cutting	9
9.1 Purpose of testing.....	9
9.2 Test specimens.....	9
9.3 Marking of positions for cutting.....	9
9.3.1 Test position line on shoulder.....	9
9.3.2 Test position on the sleeve.....	10
9.3.3 Test positions if there are seams in the protective material.....	10
9.4 Test mounts.....	12
9.4.1 Shoulder test mount.....	12
9.4.2 Sleeve test mount.....	12
9.5 Apparatus.....	12
9.6 Mounting of test specimens.....	13
9.6.1 Shoulder test.....	13
9.6.2 Sleeve test.....	14
9.7 Test procedure.....	14
9.7.1 Positions of cuts.....	14

	9.7.2	Number of cuts.....	15
	9.7.3	Chain speed	15
10		Testing of the protective material attachment.....	15
	10.1	General.....	15
	10.2	Test specimens.....	15
	10.3	Apparatus.....	15
	10.4	Test procedure.....	15
11		Ergonomic testing.....	16
	11.1	Ergonomic assessment.....	16
	11.2	Test for surface conditions.....	16
	11.3	Procedures.....	16
12		Test report.....	17
13		Marking.....	18
14		Pictogram.....	18
15		Information to be supplied by the manufacturer.....	19
		Annex A (informative) Chainsaw use and the selection of appropriate upper body protectors.....	20
		Bibliography	22

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).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

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.

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.