



Fastställd 2020-06-10

Utgåva 1 Sida

1 (1+66)

Ansvarig kommitté

SEK TK 116

© Copyright SEK Svensk Elstandard. Reproduction in any form without permission is prohibited.

Handhållna och transportabla elverktyg samt trädgårdsmaskiner – Säkerhet –

Del 4-1: Särskilda fordringar på kedjesågar

Electric motor-operated hand-held tools, transportable tools and lawn and garden machinery – Safety –

Part 4-1: Particular requirements for chain saws

Som svensk standard gäller europastandarden EN 62841-4-1:2020. Den svenska standarden innehåller den officiella engelska språkversionen av EN 62841-4-1:2020.

Nationellt förord

Europastandarden EN 62841-4-1:2020

består av:

- europastandardens ikraftsättningsdokument, utarbetat inom CENELEC
- IEC 62841-4-1, First edition, 2017 Electric motor-operated hand-held tools, transportable tools and lawn and garden machinery - Safety - Part 4-1: Particular requirements for chain saws

utarbetad inom International Electrotechnical Commission, IEC.

Standarden ska användas tillsammans med SS-EN 62841-1, utgåva 1, 2015.

Tidigare fastställd svensk standard SS-EN 60745-2-13, utgåva 2, 2009 och SS-EN 60745-2-13/A1, utgåva 1, 2011, gäller ej fr o m 2024-03-13.

ICS 25.140.20

Standarder underlättar utvecklingen och höjer elsäkerheten

Det finns många fördelar med att ha gemensamma tekniska regler för bl a mätning, säkerhet och provning och för utförande, skötsel och dokumentation av elprodukter och elanläggningar.

Genom att utforma sådana standarder blir säkerhetsfordringar tydliga och utvecklingskostnaderna rimliga samtidigt som marknadens acceptans för produkten eller tjänsten ökar.

Många standarder inom elområdet beskriver tekniska lösningar och metoder som åstadkommer den elsäkerhet som föreskrivs av svenska myndigheter och av EU.

SEK är Sveriges röst i standardiseringsarbetet inom elområdet

SEK Svensk Elstandard svarar för standardiseringen inom elområdet i Sverige och samordnar svensk medverkan i internationell och europeisk standardisering. SEK är en ideell organisation med frivilligt deltagande från svenska myndigheter, företag och organisationer som vill medverka till och påverka utformningen av tekniska regler inom elektrotekniken.

SEK samordnar svenska intressenters medverkan i SEKs tekniska kommittéer och stödjer svenska experters medverkan i internationella och europeiska projekt.

Stora delar av arbetet sker internationellt

Utformningen av standarder sker i allt väsentligt i internationellt och europeiskt samarbete. SEK är svensk nationalkommitté av International Electrotechnical Commission (IEC) och Comité Européen de Normalisation Electrotechnique (CENELEC).

Standardiseringsarbetet inom SEK är organiserat i referensgrupper bestående av ett antal tekniska kommittéer som speglar hur arbetet inom IEC och CENELEC är organiserat.

Arbetet i de tekniska kommittéerna är öppet för alla svenska organisationer, företag, institutioner, myndigheter och statliga verk. Den årliga avgiften för deltagandet och intäkter från försäljning finansierar SEKs standardiseringsverksamhet och medlemsavgift till IEC och CENELEC.

Var med och påverka!

Den som deltar i SEKs tekniska kommittéarbete har möjlighet att påverka framtida standarder och får tidig tillgång till information och dokumentation om utvecklingen inom sitt teknikområde. Arbetet och kontakterna med kollegor, kunder och konkurrenter kan gynnsamt påverka enskilda företags affärsutveckling och bidrar till deltagarnas egen kompetensutveckling.

Du som vill dra nytta av dessa möjligheter är välkommen att kontakta SEKs kansli för mer information.

SEK Svensk Elstandard

Box 1284 164 29 Kista Tel 08-444 14 00 www.elstandard.se

EUROPEAN STANDARD NORME EUROPÉENNE EUROPÄISCHE NORM

EN 62841-4-1

March 2020

ICS 25.140.20

Supersedes EN 60745-2-13:2009 and all of its amendments and corrigenda (if any)

English Version

Electric Motor-Operated Hand-Held Tools, Transportable Tools and Lawn and Garden Machinery - Safety - Part 4-1: Particular requirements for chain saws (IEC 62841-4-1:2017, modified)

Outils électroportatifs à moteur, outils portables et machines pour jardins et pelouses - Sécurité - Partie 4-1: Exigences particulières pour les scies à chaîne (IEC 62841-4-1:2017, modifiée) Elektrische motorbetriebene handgeführte Werkzeuge, transportable Werkzeuge und Rasen- und Gartenmaschinen - Sicherheit - Teil 4-1: Besondere Anforderungen für Kettensägen (IEC 62841-4-1:2017, modifiziert)

This European Standard was approved by CENELEC on 2017-11-15. CENELEC 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 CENELEC 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 CENELEC member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

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



European Committee for Electrotechnical Standardization Comité Européen de Normalisation Electrotechnique Europäisches Komitee für Elektrotechnische Normung

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

© 2020 CENELEC All rights of exploitation in any form and by any means reserved worldwide for CENELEC Members.

Ref. No. EN 62841-4-1:2020 E

European foreword

The text of document 116/339/FDIS, future edition 1 of IEC 62841-4-1, prepared by IEC/TC 116 "Safety of motor-operated electric tools" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 62841-4-1:2020.

A draft amendment, which covers common modifications to IEC 62841-4-1 (116/339/FDIS), was prepared by CLC/TC 116 "Safety of motor-operated electric tools" and approved by CENELEC.

The following dates are fixed:

- latest date by which this document has (dop) 2020-09-13 to be implemented at national level by publication of an identical national standard or by endorsement
- latest date by which the national (dow) 2024-03-13 standards conflicting with this document have to be withdrawn

EN 62841-4-1:2020 supersedes EN 60745-2-13:2009 + A1:2010.

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

This European Standard is divided into four parts:

- Part 1: General requirements which are common to most hand-held electric motor operated tools (for the purpose of this standard referred to simply as tools) which could come within the scope of this standard;
- Part 2, 3 or 4: Requirements for particular types of tools which either supplement or modify the requirements given in Part 1 to account for the particular hazards and characteristics of these specific tools.

This Part 4-1 is to be used in conjunction with EN 62841-1:2015.

This Part 4-1 supplements or modifies the corresponding clauses in EN 62841-1:2015, so as to convert it into the European Standard: Particular requirements for chain saws.

Where a particular subclause of Part 1 is not mentioned in this Part 4-1, that subclause applies as far as relevant. When this standard states "addition", "modification" or "replacement", the relevant text in Part 1 is to be adapted accordingly.

The following print types are used:

- requirements: in roman type;
- test specifications: in italic type;
- notes: in smaller roman type.

The terms defined in Clause 3 are printed in **bold typeface**.

Subclauses, notes, tables and figures which are additional to those in Part 1 are numbered starting from 101.

Clauses, subclauses, notes, tables, figures and annexes which are additional to those in IEC 62841-4-1:2017 are prefixed "Z".

This European Standard follows the overall requirements of EN ISO 12100.

This document has been prepared under a mandate given to CENELEC 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 ZZ, which is an integral part of this document.

Compliance with the clauses of Part 1 together with this Part 4-1 provides one means of conforming with the essential health and safety requirements of the Directive concerned.

Endorsement notice

The text of the International Standard IEC 62841-4-1:2017 was approved by CENELEC as a European Standard with agreed common modifications.

Add the following annexes:

Annex ZA

(normative)

Normative references to international publications with their corresponding European publications

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

NOTE 1 When an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: www.cenelec.eu.

This annex from EN 62841-1:2015 is applicable with the following addition:

<u>Publication</u>	<u>Year</u>	<u>Title</u>	EN/HD	<u>Year</u>
IEC 61672-1	-	Electroacoustics – Sound level meters – Part 1: Specifications	EN 61672-1	2013
ISO 354	2003	Acoustics – Measurement of sound absorption in a reverberation room	EN ISO 354	2003
ISO 3744	2010	Acoustics – Determination of sound power levels and sound energy levels of noise sources using sound pressure – Engineering methods for an essentially free field over a reflecting plane	EN ISO 3744	2010
ISO 6533	2012	Forestry machinery – Portable chain-saw front hand-guard – Dimensions and clearances	-	-
ISO 6534	2007	Forestry machinery – Portable chain-saw hand-guards – Mechanical strength	-	-
ISO 7914	2002	Forestry machinery – Portable chain saws – Minimum handle clearance and sizes	-	-
ISO 7915	1991	Forestry machinery – Portable chain-saws – Determination of handle strength	-	-
ISO 9518	-	Forestry machinery – Portable chain-saws – Kickback test	-	-
ISO 10726	1992	Portable chain-saws – Chain catcher – Dimensions and mechanical strength	-	-
ISO 11681-2	2011	Machinery for forestry – Portable chain-saw safety requirements and testing – Part 2: Chain-saws for tree service	EN ISO 11681-2	2011
ISO 13772	2018	Forestry machinery – Portable chain saws - Non-manually actuated chain brake performance	-	-

EN 62841-4-1:2020 (E)

<u>Publication</u>	<u>Year</u>	<u>Title</u>	EN/HD	<u>Year</u>
ISO 17080	2005	Manually portable agricultural and forestry machines and powered lawn and garden equipment – Design principles for singlepanel product safety labels	-	-
ISO 22868	2011	Forestry and gardening machinery – Noise test code for portable hand-held machines with internal combustion engine – Engineering method (Grade 2 accuracy)	EN ISO 22868	2011

CONTENTS

REWORD	4
Scope	6
Normative references	6
Terms and definitions	7
General requirements	8
General conditions for the tests	8
Radiation, toxicity and similar hazards	9
Classification	9
Marking and instructions	9
Protection against access to live parts	12
Starting	12
Input and current	12
Heating	12
Resistance to heat and fire	12
Moisture resistance	12
Resistance to rusting	13
Overload protection of transformers and associated circuits	13
Endurance	13
Abnormal operation	13
Mechanical hazards	14
Mechanical strength	19
Construction	20
Internal wiring	22
Components	22
Supply connection and external flexible cords	23
Terminals for external conductors	24
Provision for earthing	24
Screws and connections	24
Creepage distances, clearances and distances through insulation	24
exes	30
ex I (informative) Measurement of noise and vibration emissions	30
ex K (normative) Battery tools and battery packs	37
ex L (normative) Battery tools and battery packs provided with mains connection on-isolated sources	42
ex AA (normative) Safety signs	46
ex BB (informative) Examples of instructions concerning the proper techniques for ic felling, limbing, and cross-cutting	48
ex CC (informative) Example of a material and construction for fulfilling the uirements for an artificial surface	52
iography	54
ure 101 – Chain saw nomenclature	24
ure 102 – Cutting length	25
	Creepage distances, clearances and distances through insulation exes ex I (informative) Measurement of noise and vibration emissions ex K (normative) Battery tools and battery packs ex L (normative) Battery tools and battery packs provided with mains connection on-isolated sources. ex AA (normative) Safety signs ex BB (informative) Examples of instructions concerning the proper techniques for ic felling, limbing, and cross-cutting.

Figure 103 – Holding the chain saw	26
Figure 104 – Minimum rear hand guard dimensions	26
Figure 105 – Straight test probe	27
Figure 106 – Measuring direction of static activation force <i>F</i>	27
Figure 107 – Impact direction and pendulum	28
Figure 108 – Saw chain drive link spacing	28
Figure 109 – Chain saw balance	29
Figure 110 – Test assembly for accessibility of attachment plug blades	29
Figure I.101 – Microphone positions on the hemisphere (see Table I.101)	35
Figure I.102 – Positions of transducers for chain saws	36
Figure BB.101 – Description of felling: escape routes	49
Figure BB.102 – Description of felling: undercutting	50
Figure BB.103 – Tree limbing	50
Figure BB.104 – Log supported along the entire length	50
Figure BB.105 – Log supported one end	51
Figure BB.106 – Log supported both ends	51
Figure BB.107 – Cross-cutting/bucking a log	51
Figure CC.1 – Sketch of the measurement surface covered with an artificial surface (not to scale)	53
Table 4 – Required performance levels	14
Table I.101 – Co-ordinates of microphone positions	32
Table I.102 – Absorption coefficients	32
Table I.103 – Test conditions	35

INTERNATIONAL ELECTROTECHNICAL COMMISSION

ELECTRIC MOTOR-OPERATED HAND-HELD TOOLS, TRANSPORTABLE TOOLS AND LAWN AND GARDEN MACHINERY – SAFETY –

Part 4-1: Particular requirements for chain saws

FOREWORD

- 1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
- 2) The formal decisions or agreements of IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National Committees.
- 3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
- 4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
- 5) IEC itself does not provide any attestation of conformity. Independent certification bodies provide conformity assessment services and, in some areas, access to IEC marks of conformity. IEC is not responsible for any services carried out by independent certification bodies.
- 6) All users should ensure that they have the latest edition of this publication.
- 7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
- 8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
- 9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 62841-4-1 has been prepared by IEC technical committee 116: Safety of motor-operated electric tools.

The text of this International Standard is based on the following documents:

FDIS	Report on voting	
116/339/FDIS	116/344/RVD	

Full information on the voting for the approval of this International Standard can be found in the report on voting indicated in the above table.

This document has been drafted in accordance with the ISO/IEC Directives, Part 2.

This Part 4-1 is to be used in conjunction with the first edition of IEC 62841-1 (2014).

This Part 4-1 supplements or modifies the corresponding clauses in IEC 62841-1, so as to convert it into the IEC Standard: Particular requirements for chain saws.

Where a particular subclause of Part 1 is not mentioned in this Part 4-1, that subclause applies as far as relevant. Where this standard states "addition", "modification" or "replacement", the relevant text in Part 1 is to be adapted accordingly.

The following print types are used:

- requirements: in roman type;
- test specifications: in italic type;
- notes: in small roman type;
- terms defined in Clause 3: in bold typeface.

Subclauses, notes, tables and figures which are additional to those in Part 1, except as described for Annex K and Annex L below, are numbered starting from 101.

Subclauses, notes, tables and figures in Annex K and Annex L which are additional to those in the main body of this Part 4-1 as well as Annex K and Annex L of Part 1 are numbered starting from 301.

A list of all parts of the IEC 62841 series, under the general title: *Electric motor-operated hand-held tools, transportable tools and lawn and garden machinery* – *Safety*, can be found on the IEC website.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under "http://webstore.iec.ch" in the data related to the specific document. At this date, the document will be

- · reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

NOTE The attention of National Committees is drawn to the fact that equipment manufacturers and testing organizations may need a transitional period following publication of a new, amended or revised IEC publication in which to make products in accordance with the new requirements and to equip themselves for conducting new or revised tests

It is the recommendation of the committee that the content of this publication be adopted for implementation nationally not earlier than 36 months from the date of publication.

IMPORTANT – The 'colour inside' logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.

ELECTRIC MOTOR-OPERATED HAND-HELD TOOLS, TRANSPORTABLE TOOLS AND LAWN AND GARDEN MACHINERY – SAFETY –

Part 4-1: Particular requirements for chain saws

1 Scope

This clause of Part 1 is applicable, except as follows:

Addition:

This standard applies to **chain saws** for cutting wood and designed for use by one person. This standard does not cover **chain saws** designed for use in conjunction with a guide-plate and riving knife or in any other way such as with a support or as a stationary or transportable machine.

This standard does not apply to

- chain saws for tree service as defined in ISO 11681-2; or
- pole-mounted pruners.

NOTE 101 Pole-mounted pruners will be covered by a future part of IEC 62841.

The **chain saws** covered by this standard are designed only to be operated with the right hand on the **rear handle** and the left hand on the **front handle**.

2 Normative references

This clause of Part 1 is applicable, except as follows:

Addition:

IEC 61672-1, Electroacoustics - Sound level meters - Part 1: Specifications

ISO 354:2003, Acoustics - Measurement of sound absorption in a reverberation room

ISO 3744:2010, Acoustics – Determination of sound power levels and sound energy levels of noise sources using sound pressure – Engineering methods for an essentially free field over a reflecting plane

ISO 6533:2012, Forestry machinery – Portable chain-saw front hand-guard – Dimensions and clearances

ISO 6534:2007, Forestry machinery – Portable chain-saw hand-guards – Mechanical strength

ISO 7914:2002, Forestry machinery – Portable chain-saws – Minimum handle clearance and sizes

ISO 7915:1991, Forestry machinery – Portable chain-saws – Determination of handle strength

ISO 9518, Forestry machinery – Portable chain-saws – Kickback test

ISO 10726:1992, Portable chain-saws – Chain catcher – Dimensions and mechanical strength

ISO 11681-2:2011, Machinery for forestry – Portable chain-saw safety requirements and testing – Part 2: Chain-saws for tree service

ISO 13772:2009, Forestry machinery – Portable chain saws – Non-manually actuated chain brake performance

ISO 17080:2005, Manually portable agricultural and forestry machines and powered lawn and garden equipment – Design principles for single-panel product safety labels

ISO 22868:2011, Forestry and gardening machinery – Noise test code for portable hand-held machines with internal combustion engine – Engineering method (Grade 2 accuracy)