



SLOVENSKI STANDARD
oSIST prEN IEC 62841-4-9:2023
01-november-2023

Elektromotorna ročna orodja, prenosna orodja ter stroji za trato in vrt - Varnost - 4-9. del: Posebne zahteve za akumulatorske verižne žage za nego dreves

Electric motor-operated hand-held tools, transportable tools and lawn and garden machinery - Safety - Part 4-9: Particular requirements for battery-operated chain saws for tree service

iTeh STANDARD PREVIEW
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Outils électroportatifs à moteur, outils portables et machines pour jardins et pelouses - Sécurité - Partie 4-9: Exigences particulières pour les scies à chaîne alimentées par batterie pour l'élagage des arbres

Ta slovenski standard je istoveten z: prEN IEC 62841-4-9:2023

ICS:

25.140.20	Električna orodja	Electric tools
65.060.70	Vrtnarska oprema	Horticultural equipment

oSIST prEN IEC 62841-4-9:2023 **en**



116/673/CDV

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IEC TC 116 : SAFETY OF MOTOR-OPERATED ELECTRIC TOOLS	
SECRETARIAT: United States of America	SECRETARY: Mr Joseph Harding
OF INTEREST TO THE FOLLOWING COMMITTEES:	PROPOSED HORIZONTAL STANDARD: <input type="checkbox"/> Other TC/SCs are requested to indicate their interest, if any, in this CDV to the secretary.
FUNCTIONS CONCERNED: <input type="checkbox"/> EMC <input type="checkbox"/> ENVIRONMENT <input type="checkbox"/> QUALITY ASSURANCE <input checked="" type="checkbox"/> SAFETY	
<input checked="" type="checkbox"/> SUBMITTED FOR CENELEC PARALLEL VOTING Attention IEC-CENELEC parallel voting The attention of IEC National Committees, members of CENELEC, is drawn to the fact that this Committee Draft for Vote (CDV) is submitted for parallel voting. The CENELEC members are invited to vote through the CENELEC online voting system.	<input type="checkbox"/> NOT SUBMITTED FOR CENELEC PARALLEL VOTING

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TITLE:

Electric motor-operated hand-held tools, transportable tools and lawn and garden machinery - Safety - Part 4-9: Particular requirements for battery-powered chain saws for tree service

PROPOSED STABILITY DATE: 2028

NOTE FROM TC/SC OFFICERS:

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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

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**Part 4-9: Particular requirements for battery-powered chain saws for tree
service**

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FOREWORD

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IEC 62841-4-9 has been prepared by IEC technical committee 116: Safety of motor-operated electric tools. It is an International Standard.

129

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

Draft	Report on voting
116/XX/FDIS	116/XX/RVD

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Full information on the voting for its approval can be found in the report on voting indicated in the above table.

133

The language used for the development of this International Standard is English.

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This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/publications.

- 138 This document is to be used in conjunction with IEC 62841-1:2014.
- 139 This document supplements or modifies the corresponding clauses in IEC 62841-1:2014, so as
140 to convert it into the IEC Standard: Particular requirements for battery-powered chain saws for
141 tree service.
- 142 Where a particular subclause of IEC 62841-1:2014 is not mentioned in this document, that
143 subclause applies as far as reasonable. Where this document states "addition", "modification"
144 or "replacement", the relevant text in IEC 62841-1 is to be adapted accordingly.
- 145 The following print types are used:
- 146 – requirements: in roman type;
147 – *test specifications: in italic type;*
148 – **terms defined in Clause 3: in bold type;**
149 – notes: in small roman type.
- 150 Subclauses, notes, tables and figures which are additional to those in IEC 62841-1:2014 are
151 numbered starting from 101.
- 152 Subclauses, notes, tables and figures in Annex K which are additional to those in the main body
153 of this document are numbered starting from 301.
- 154 A list of all parts in the IEC 62841 series, published under the general title *Electric motor-*
155 *operated hand-held tools, transportable tools and lawn and garden machinery – Safety*, can be
156 found on the IEC website.
- 157 The committee has decided that the contents of this document will remain unchanged until the
158 stability date indicated on the IEC website under webstore.iec.ch in the data related to the
159 specific document. At this date, the document will be
- 160 • reconfirmed,
 - 161 • withdrawn,
 - 162 • replaced by a revised edition, or
 - 163 • amended.
- 164 NOTE The attention of National Committees is drawn to the fact that equipment manufacturers and testing
165 organizations may need a transitional period following publication of a new, amended or revised IEC publication in
166 which to make products in accordance with the new requirements and to equip themselves for conducting new or
167 revised tests.
- 168 It is the recommendation of the committee that the content of this publication be adopted for implementation nationally
169 not earlier than 36 months from the date of publication.

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INTRODUCTION

173 The International Electrotechnical Commission (IEC) draws attention to the fact that it is claimed
174 that compliance with this document may involve the use of patents concerning prevention of
175 inadvertent starting given in Subclause 21.18.102.

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193 ISO (www.iso.org/patents) and IEC (<http://patents.iec.ch>) maintain on-line data bases of
194 patents relevant to their standards. Users are encouraged to consult the data bases for the
195 most up to date information concerning patents.

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<https://standards.iteh.ai/catalog/standards/sist/57654c72-3394-4ce6-be59-e1f17162d773/osist-pren-iec-62841-4-9-2023>

198 **ELECTRIC MOTOR-OPERATED HAND-HELD TOOLS, TRANSPORTABLE**
199 **TOOLS AND LAWN AND GARDEN MACHINERY –**
200 **SAFETY –**

201

202 **Part 4-9: Particular requirements for battery-powered chain saws for tree**
203 **service**

204

205

206 **1 Scope**

207 *Replacement:*

208 This document applies to rechargeable **battery**-powered motor-operated or magnetically driven
209 **chain saws for tree service**, hereinafter referred to as chain saws or machines, having a
210 maximum mass of 5,0 kg with the heaviest **detachable battery pack(s)**, if any, as described in
211 IEC 62841-1:2014, K.8.14.2 e) 2) installed but without a **guide bar** or **saw chain** fitted and with
212 the lubrication tank, if any, empty. Chain saws covered by this document are intended to be
213 used for pruning and dismantling standing tree crowns.

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

216 This document does not apply to

217 – chain saws supplied by mains power or power from non-isolated sources that permit the
218 machine to be used while connected to such power supplies; or

219 – chain saws supplied by **integral batteries**; or

220 – chain saws for cutting wood as covered by IEC 62841-4-1; or

221 – chain saws for forest service as covered by ISO 11681-1; or

222 – chain saws designed for use in conjunction with a guide-plate and riving knife or in any other
223 way such as with a support or as a stationary or transportable machine; or

224 – pole-mounted pruners; or

225 – pruning saws.

226 NOTE 1 Pole-mounted pruners will be covered by a future part of IEC 62841-4.

227 NOTE 2 Pruning saws will be covered by a future part of IEC 62841-4.

228 The maximum **rated voltage** for machines and **battery** packs is 75 V d.c.

229 Battery machines covered by this document are not considered to be **class I tools**, **class II**
230 **tools** or **class III tools** and therefore are not required to have **basic insulation**,
231 **supplementary insulation** or **reinforced insulation**. Electric shock hazard is considered to
232 exist only between parts of opposite polarity.

233 This document deals with the hazards presented by machines which are encountered by all
234 persons in the **normal use** and reasonably foreseeable misuse of the machines.

235 When evaluating a rechargeable **battery** pack for protection against electric shock during
236 charging, **creepage distances**, **clearances** and distances through insulation, the relevant
237 requirements of this document are applicable with the **battery** pack fitted to the intended
238 **charger**.

239 Since rechargeable **battery** packs for machines are submitted to different use patterns (such
240 as rough use, high charging and discharging currents) their safety can be evaluated only by
241 this document and not by using other standards for rechargeable **battery** packs, such as
242 IEC 62133-1:2017 or IEC 62133-2:2017, unless otherwise indicated in this document. All
243 relevant aspects related to the safety of rechargeable **batteries** are addressed in this document,
244 such that the requirements of IEC 62133-1:2017 or IEC 62133-2:2017 need not be separately
245 applied.

246 When evaluating the risk of **fire** associated with rechargeable **battery** packs for machines,
247 consideration has been given to the fact that these **battery** packs are unattended energy
248 sources and have been evaluated as such in this document. Requirements in other standards
249 regarding the risk of **fire** due to the charging of these **battery** packs are therefore considered
250 to be fulfilled.

251 This document also addresses requirements covering the use of lithium-ion **cells** employed in
252 **battery systems** in machines. The following is considered within the context of these
253 requirements:

254 – These requirements address the risk of **fire** or **explosion** of these **batteries** and not any
255 possible hazards associated with toxicity nor potential hazards associated with
256 transportation or disposal.

257 NOTE 3 IEC 62281:2019 covers the safety aspects of lithium-ion **batteries** during transport.

258 – **Battery systems** covered by these requirements are not intended to be serviced by the end
259 user.

260 – These requirements are intended to provide comprehensive evaluation of a **battery** only if
261 used in products covered by this document.

262 – These requirements address the safety of **lithium-ion battery systems** during storage and
263 use including discharge and charge. These requirements are only considered to be
264 supplementary requirements in regards to battery **charger** fire and electric shock.

265 – These requirements refer to and require parameters supplied in reference to the **cells** that
266 establish conditions for safe use of those **cells**. Those parameters form the basis of
267 acceptance criteria for a number of tests contained herein. This document does not
268 independently evaluate the safety of **cells**. These parameters, taken as a set, constitute the
269 “**Specified Operating Region**” for a **cell**. There may be several sets of **specified operating**
270 **region(s)**.

271 This document does not apply to machines using **general purpose batteries** installed by the
272 user and this document alone will not be sufficient to ensure all hazards are considered for
273 these products.

274 This document does not apply to the safety of battery **chargers** themselves.

275 NOTE 4 IEC 60335-2-29 covers a variety of **chargers**.

276 2 Normative references

277 IEC 62841-1:2014, Clause 2 is applicable, except as follows:

278 *Replacement of undated normative reference for ISO 3744:*

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

282 *Replacement of undated normative reference for ISO 11203:*

283 ISO 11203:1995, *Acoustics – Noise emitted by machinery and equipment – Determination of*
284 *emission sound pressure levels at a work station and at other specified positions from the sound*
285 *power level*
286 Amendment 1:2020

287 *Addition:*

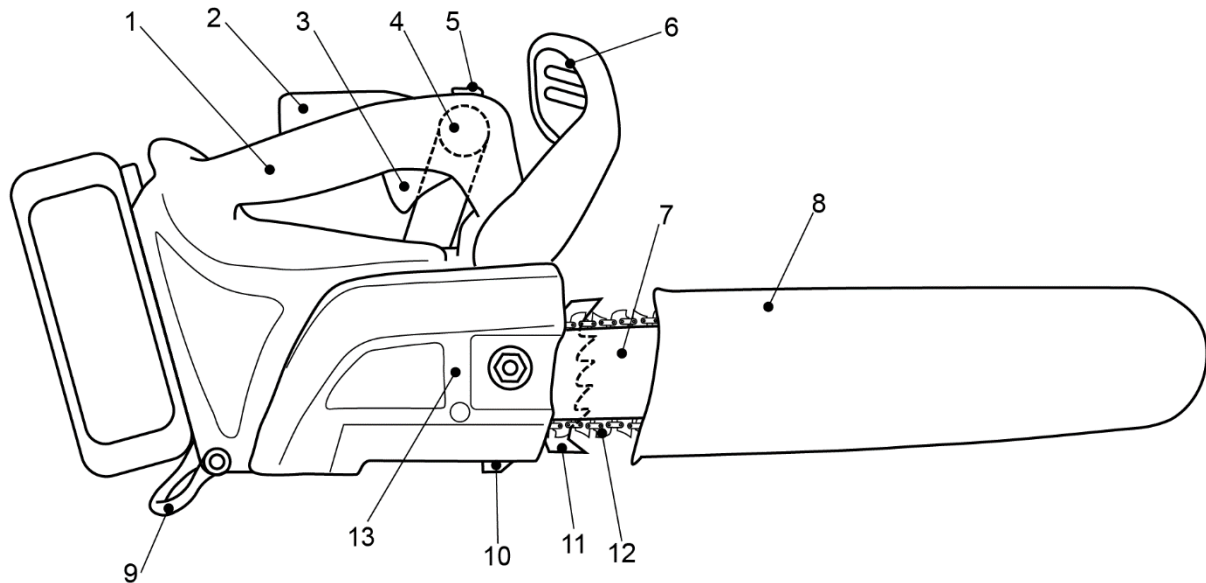
288 IEC 62841-1:2014, *Electric motor-operated hand-held tools, transportable tools and lawn and*
289 *garden machinery – Safety – Part 1: General requirements*

290 ISO 354:2003, *Acoustics – Measurement of sound absorption in a reverberation room*

291 ISO 3864-3:2012, *Graphical symbols – Safety colours and safety signs – Part 3: Design*
292 *principles for graphical symbols used in safety signs*

- 293 ISO 6533:2020, *Forestry machinery – Portable Chain saw front hand-guard – Dimensions and*
294 *clearances*
- 295 ISO 6534:2007, *Forestry machinery - Portable Chain saw hand-guards – Mechanical strength*
296 *Amendment 1:2012*
- 297 ISO 7914:2002, *Forestry machinery – Portable Chain saws – Minimum handle clearance and*
298 *sizes*
299 *Amendment 1:2012*
- 300 ISO 7915:2021, *Forestry machinery – Portable Chain saws – Determination of handle strength*
- 301 ISO 8334:2007, *Forestry machinery – Portable Chain saws – Determination of balance and*
302 *maximum holding moment*
- 303 ISO 9518:2018, *Forestry machinery – Portable Chain saws – Kickback test*
- 304 ISO 10726:2020, *Portable Chain saws – Chain catcher – Dimensions and mechanical strength*
- 305 ISO 11681-2:2022, *Machinery for forestry – Portable Chain saw safety requirements and testing*
306 *– Part 2: Chain saws for tree service*
- 307 ISO 13772:2018, *Forestry machinery - Portable Chain saws - Non-manually actuated chain*
308 *brake performance*
309 *Amendment 1:2020*
- 310 ISO 17080:2005, *Manually portable agricultural and forestry machines and powered lawn and*
311 *garden equipment - Design principles for single-panel product safety labels*
- 312 ISO 22868:2021, *Forestry and gardening machinery - Noise test code for portable hand-held*
313 *machines with internal combustion engine - Engineering method (Grade 2 accuracy)*
- 314 **3 Terms and definitions**
- 315 IEC 62841-1:2014, Clause 3 is applicable, except as follows:
- 316 **3.101**
317 **bar tip guard**
318 shield that prevents contact with the **saw chain** at the tip of the **guide bar**
- 319 **3.102**
320 **chain brake**
321 function or device for stopping the **saw chain** activated manually or non-manually when
322 **kickback** occurs
- 323 **3.102.1**
324 **manually activated chain brake**
325 braking function triggered by the hand of the operator
- 326 **3.102.2**
327 **non-manually activated chain brake**
328 braking function triggered by **kickback** motion independent of operator activation
- 329 **3.103**
330 **chain catcher**
331 device for restraining the **saw chain** if it breaks or derails (see Figure 101)
- 332

- 333 **3.104**
334 **chain saw for tree service**
335 specialized machine of limited mass for cutting wood with a **saw chain**, designed for pruning
336 and dismantling standing tree crowns and consisting of an integrated unit of handles, motor,
337 **guide bar** and **saw chain**, designed to be supported with two hands (see Figure 101)
- 338 **3.105**
339 **cutting length**
340 approximate effective length of cut of the chain saw
- 341 Note 101 to entry: The method for determining cutting length is specified in K.21.102
- 342 **3.106**
343 **drive sprocket**
344 chain drive wheel with teeth
- 345 **3.107**
346 **front hand-guard**
347 guard between the **front handle** and the **saw chain** for protecting the hand from injuries if the
348 hand slips off the handle (see Figure 101)
- 349 **3.108**
350 **front handle**
351 support handle located at or towards the front of the machine (see Figure 101)
- 352 **3.109**
353 **guide bar**
354 **attachment** that supports and guides the **saw chain** (see Figure 101)
- 355 **3.110**
356 **kickback**
357 rapid upward and/or backward motion of the chain saw which can occur when the moving **saw**
358 **chain** contacts an object such as a log or branch near the tip of the **guide bar** or when the
359 wood closes in and pinches the moving **saw chain**
- 360 **3.111**
361 **maximum speed**
362 highest steady-state **saw chain** speed attainable under all conditions of **normal use**, including
363 no-load, when adjusted in accordance with the manufacturer's specifications and/or instructions
- 364 Note 101 to entry: The steady-state **saw chain** speed excludes transients such as overshoot that may occur before
365 attaining a steady-state condition.
- 366 **3.112**
367 **operator presence sensor**
368 device to detect the presence of an operator's hand
- 369 **3.113**
370 **rear hand-guard**
371 extension on the lower part of the **rear handle** for protecting the hand from the **saw chain** if it
372 breaks or derails (see Figure K.302)
- 373 **3.114**
374 **rear handle**
375 support handle located at or towards the rear of the machine (see Figure 101)
- 376 **3.115**
377 **saw chain**
378 **attachment** serving as a cutting tool, consisting of drive links and cutters (see Figure 101 and
379 Figure K.307)
- 380 **3.116**
381 **spiked bumper**
382 device fitted in front of the **guide bar** mounting point, acting as a pivot when in contact with a
383 tree or log (see Figure 101)

384
385386 **Key**

- 387 1 **rear handle**
 388 2 **operator presence sensor**
 389 3 **power switch**
 390 4 **front handle**
 391 5 **lock-off device**
 392 6 **front hand-guard**
 393 7 **guide bar**
 394 8 **guide bar cover**
 395 9 **attachment device**
 396 10 **chain catcher**
 397 11 **spiked bumper**
 398 12 **saw chain**
 399 13 **drive sprocket cover**

400

Figure 101 – Chain saw nomenclature401 **4 General requirements**

402 IEC 62841-1:2014, Clause 4 is applicable.

403 **5 General conditions for the tests**

404 IEC 62841-1:2014, Clause 5 is applicable.

405 **6 Radiation, toxicity and similar hazards**

406 IEC 62841-1:2014, Clause 6 is applicable.

407 **7 Classification**

408 IEC 62841-1:2014, Clause 7 is applicable.

409 **8 Marking and instructions**

410 IEC 62841-1:2014, Clause 8 is applicable.

411 **9 Protection against access to live parts**

412 IEC 62841-1:2014, Clause 9 is applicable.

413 10 Starting

414 IEC 62841-1:2014, Clause 10 is not applicable.

415 11 Input and current

416 IEC 62841-1:2014, Clause 11 is not applicable.

417 12 Heating

418 IEC 62841-1:2014, Clause 12 is applicable.

419 13 Resistance to heat and fire

420 IEC 62841-1:2014, Clause 13 is applicable.

421 14 Moisture resistance

422 IEC 62841-1:2014, Clause 14 is not applicable.

423 15 Resistance to rusting

424 IEC 62841-1:2014, Clause 15 is applicable.

425 16 Overload protection of transformers and associated circuits

426 IEC 62841-1:2014, Clause 16 is not applicable.

427 17 Endurance

428 IEC 62841-1:2014, Clause 17 is not applicable.

429 18 Abnormal operation

430 IEC 62841-1:2014, Clause 18 is applicable.

431 19 Mechanical hazards

432 IEC 62841-1:2014, Clause 19 is applicable.

433 20 Mechanical strength

434 IEC 62841-1:2014, Clause 20 is applicable.

435 21 Construction

436 IEC 62841-1:2014, Clause 21 is applicable.

437 22 Internal wiring

438 IEC 62841-1:2014, Clause 22 is applicable.

439 23 Components

440 IEC 62841-1:2014, Clause 23 is applicable.

441 24 Supply connection and external flexible cords

442 IEC 62841-1:2014, Clause 24 is applicable.

443 25 Terminals for external conductors

444 IEC 62841-1:2014, Clause 25 is not applicable.

445 **26 Provision for earthing**

446 IEC 62841-1:2014, Clause 26 is not applicable.

447 **27 Screws and connections**

448 IEC 62841-1:2014, Clause 27 is applicable.

449 **28 Creepage distances, clearances and distances through insulation**

450 IEC 62841-1:2014, Clause 28 is not applicable.

451

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