

IEC 62841-2-16

Edition 1.0 2024-04

PRE-RELEASE VERSION (FDIS)

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

Part 2-16: Particular requirements for hand-held fastener driving tools

INTERNATIONAL ELECTROTECHNICAL COMMISSION

ICS 25.140.20

Warning! Make sure that you obtained this publication from an authorized distributor.





FINAL DRAFT INTERNATIONAL STANDARD (FDIS)

PROJECT NUMBER:	
IEC 62841-2-16 ED1	
DATE OF CIRCULATION:	CLOSING DATE FOR VOTING:
2024-04-12	2024-05-24
SUPERSEDES DOCUMENTS:	
116/553/CDV, 116/590B/RVC	

IEC TC 116 : SAFETY OF MOTOR-OPERATED ELECTRIC TOOLS			
SECRETARIAT:		SECRETARY:	
United States of America		Mr Joseph Harding	
OF INTEREST TO THE FOLLOWING	COMMITTEES:	HORIZONTAL STANDARD:	
FUNCTIONS CONCERNED:			
☐ EMC		QUALITY ASSURANCE	SAFETY
SUBMITTED FOR CENELEC PA	ARALLEL VOTING	NOT SUBMITTED FOR CENE	EC PARALLEL VOTING
Attention IEC-CENELEC para	llel voting		
The attention of IEC Nation: CENELEC, is drawn to the International Standard (FDIS) is	fact that this Final Draft		
The CENELEC members are in CENELEC online voting system	0		

This document is a draft distributed for approval. It may not be referred to as an International Standard until published as such.

In addition to their evaluation as being acceptable for industrial, technological, commercial and user purposes, Final Draft International Standards may on occasion have to be considered in the light of their potential to become standards to which reference may be made in national regulations.

Recipients of this document are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

Recipients of this document are invited to consider for future work to include relevant "In Some Countries" clauses. Recipients are reminded that the CDV stage is the final stage for submitting ISC clauses. (SEE <u>AC/22/2007</u> OR NEW <u>GUIDANCE DOC</u>).

TITLE:

Electric motor-operated hand-held tools, transportable tools and lawn and garden machinery - Safety - Part 2-16: Particular requirements for hand-held fastener driving tools

PROPOSED STABILITY DATE: 2027

NOTE FROM TC/SC OFFICERS:

Copyright © **2024 International Electrotechnical Commission, IEC**. All rights reserved. It is permitted to download this electronic file, to make a copy and to print out the content for the sole purpose of preparing National Committee positions. You may not copy or "mirror" the file or printed version of the document, or any part of it, for any other purpose without permission in writing from IEC.

– 2 –

IEC FDIS 62841-2-16 © IEC 2024

CONTENTS

FOF	REWORD	4
1	Scope	6
2	Normative references	6
3	Terms and definitions	7
4	General requirements	9
5	General conditions for the tests	9
6	Radiation, toxicity and similar hazards	10
7	Classification	10
8	Marking and instructions	10
9	Protection against access to live parts	12
10	Starting	12
11	Input and current	12
12	Heating	12
13	Resistance to heat and fire	13
14	Moisture resistance	13
15	Resistance to rusting	13
16	Overload protection of transformers and associated circuits	13
17	Endurance	13
18	Abnormal operation	14
19	Mechanical hazards	15
20	Mechanical strength	18
21	Construction	
22	Internal wiring	19
23	Components	19
24	Supply connection and external flexible cords	19
25	Terminals for external conductors	19
26	Provision for earthing	20
27	Screws and connections	20
28	Creepage distances, clearances and distances through insulation	20
Ann	exes	26
Ann	ex I (informative) Measurement of noise and vibration emissions	26
Ann	ex K (normative) Battery tools and battery packs	29
	ex L (normative) Battery tools and battery packs provided with mains connection on-isolated sources	35
Bibl	iography	36
	le 4 – Required performance levels	15
	le 101 – Permitted actuation modes and workpiece contact force for fastener	40
	ing tools that require a workpiece contact	
	le 12 – Minimum creepage distances and clearances	
iap	le I.101 – Detailed example of a concrete formulation	

IEC FDIS 62841-2-16 © IEC 2024

Table K.1 – Minimum creepage distances and clearances between parts of different potential	32
Table K.2 – Minimum total sum of creepage distances and clearances to accessible surfaces	33

This is a preview - click here to buy the full publication

- 4 -

IEC FDIS 62841-2-16 © IEC 2024

INTERNATIONAL ELECTROTECHNICAL COMMISSION

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

Part 2-16: Particular requirements for hand-held fastener driving tools

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) IEC draws attention to the possibility that the implementation of this document may involve the use of (a) patent(s). IEC takes no position concerning the evidence, validity or applicability of any claimed patent rights in respect thereof. As of the date of publication of this document, IEC had not received notice of (a) patent(s), which may be required to implement this document. However, implementers are cautioned that this may not represent the latest information, which may be obtained from the patent database available at https://patents.iec.ch. IEC shall not be held responsible for identifying any or all such patent rights.

IEC 62841-2-16 has been prepared by IEC technical committee 116: Safety of motor-operated electric tools. It is an International Standard.

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

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

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

IEC FDIS 62841-2-16 © IEC 2024

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

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.

This document is to be used in conjunction with IEC 62841-1:2014.

This document supplements or modifies the corresponding clauses in IEC 62841-1, so as to convert it into the IEC Standard: Particular requirements for hand-held fastener driving tools.

Where a particular subclause of IEC 62841-1 is not mentioned in this document, that subclause applies as far as reasonable. Where this document states "addition", "modification" or "replacement", the relevant text in IEC 62841-1 is to be adapted accordingly.

The following print types are used:

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

Subclauses, notes, tables and figures which are additional to those in IEC 62841-1 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 document are numbered starting from 301.

A list of all parts in the IEC 62841 series, published 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 webstore.iec.ch in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn, or
- revised.

- 6 -

IEC FDIS 62841-2-16 © IEC 2024

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

Part 2-16: Particular requirements for hand-held fastener driving tools

1 Scope

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

Addition:

This document applies to hand-held fastener driving tools

- intended for driving fasteners into or through concrete, fabric, fiberboard, metal, plastic, wood, wood products, cartons, and other materials; and
- whose energy to drive the **fastener** is derived directly or indirectly from an electric motor or magnetic drive.

This document does not apply to pneumatically driven tools where the compressed gas comes from an external source, such as a compressor or a tank.

This document does not apply to tools powered by combustible gases, even if electrically ignited.

NOTE 101 Tools powered by compressed air or combustible gases are covered by ISO 11148-13:2017.

2 Normative references

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

Addition:

IEC 60664-3, Insulation coordination for equipment within low-voltage systems – Part 3: Use of coating, potting or moulding for protection against pollution

IEC 60664-4:2005, Insulation coordination for equipment within low-voltage systems – Part 4: Consideration of high-frequency voltage stress

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

ISO 630-2:2021, Structural steels – Part 2: Technical delivery conditions for structural steels for general purposes

ISO 28927-13:2022, Hand-held portable power tools – Test methods for evaluation of vibration emission – Part 13: Fastener driving tools

EN 12549:1999, Acoustics – Noise test code for fastener driving tools – Engineering method

EN 15895:2011, Cartridge operated hand-held tools – Safety requirements – Fixing and hard marking tools