SLOVENSKI STANDARD
SIST EN 62841-2-21:2019

01-september-2019

Nadomešča:
SIST EN 60745-2-21:2009
SIST EN 60745-2-21:2009/A1:2011

Elektromotorna ročna orodja, prenosna orodja ter stroji za trato in vrt - Varnost - 2-21. del: Posebne zahteve za ročne čistilnike kanalizacije (IEC 62841-2-21:2017)

Electric motor-operated hand-held tools, transportable tools and lawn and garden machinery - Safety - Part 2-21: Particular requirements for hand-held drain cleaners(IEC 62841-2-21:2017)

Elektrische motorbetriebene handgeführte Werkzeuge, transportable Werkzeuge und Rasen- und Gartenmaschinen - Sicherheit - Teil 2-21: Besondere Anforderungen für handgeführte Abflussreiniger (IEC 62841-2-21:2017)

Outils électroportatifs à moteur, outils portables et machines pour jardins et pelouses - Sécurité - Partie 2-21: Exigences particulières pour les furets portatifs (IEC 62841-2-21:2017)

Ta slovenski standard je istoveten z: **EN 62841-2-21:2019**

ICS:

25.140.20	Električna orodja	Electric tools
91.140.70	Sanitarne naprave	Sanitary installations

SIST EN 62841-2-21:2019 **en**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 62841-2-21

May 2019

ICS 25.140.20

Supersedes EN 60745-2-21:2009

English Version

Electric motor-operated hand-held tools, transportable tools and lawn and garden machinery - Safety - Part 2-21: Particular requirements for hand-held drain cleaners (IEC 62841-2-21:2017)

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This European Standard was approved by CENELEC on 2017-06-27. 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, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, 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

European foreword

The text of document 116/316/FDIS, future edition 1 of IEC 62841-2-21, 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 62841-2-21:2019.

A draft amendment, which covers common modifications to IEC 62841-2-21 (116/316/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 to be implemented at national level by publication of an identical national standard or by endorsement	(dop)	2019-11-30
• latest date by which the national standards conflicting with this document have to be withdrawn	(dow)	2023-05-31

EN 62841-2-21:2019 supersedes EN 60745-2-21:2009 + 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 2-21 is to be used in conjunction with EN 62841-1:2015.

This Part 2-21 supplements or modifies the corresponding clauses in EN 62841-1:2015, so as to convert it into the European Standard: Particular requirements for hand-held drain cleaners.

Where a particular subclause of Part 1 is not mentioned in this Part 2-21, 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 62841-2-21:2017 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.

For the relationship with EU Directive, see informative Annex ZZ, which is an integral part of this document.

Compliance with the clauses of Part 1 together with this Part 2-21 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 62841-2-21:2017 was approved by CENELEC as a European Standard with agreed common modifications.

In the official version, for Bibliography, the following note has to be added for the standard indicated:

IEC 62841-3-14 NOTE Harmonized as EN 62841-3-14

COMMON MODIFICATIONS

Replace *the title of Annex I by the following:*

Annex I
(normative)

Measurement of noise and vibration emissions

Delete the Note.

Replace the existing Subclause I.2.4 with the following:

I.2.4 Installation and mounting conditions of the power tools during noise tests

Addition:

Drain cleaners are suspended in such a way as to correspond to **normal use**. They are tested with a **drain cleaner cable** installed but retracted.

Annex K
(normative)

Battery tools and battery packs

***Add** the following new subclause:*

K.21.18.Z101 Isolation and disabling device

Tools with an **integral battery** shall either be equipped

— with an isolation device to prevent the risk of injury from mechanical hazards during servicing or **user maintenance**; or

— with a disabling device that prevents unintentional starting of the tool.

An isolation device shall

— provide disconnection of all poles of the **battery** from the serviceable region of the tool;

— be equipped with an unambiguous indication of the state of the disconnection device which corresponds to each position of its manual control (actuator);

— be provided with protection against accidental reconnection.

NOTE 1 Examples of methods to achieve this disconnection include removable jumpers, **integral batteries** that can be disconnected for servicing or **user maintenance**, or an electromechanical **power switch** with a direct mechanical link between the actuator and the contact.

NOTE 2 The risk of accidental reconnection for a **power switch** is addressed by the requirement of 21.18.1.2. The other examples in NOTE 1 achieve this by the necessary actions for reconnection.

A disabling device may be achieved by any of the following:

— a self-restoring or non-self-restoring lock-off device where two separate and dissimilar actions are necessary before the motor is switched on (e.g. a **power switch** which has to be pushed in before it can be moved laterally to close the contacts to start the motor). It shall not be possible to achieve these two actions with a single grasping motion or a straight line motion;

— a removable disabling device provided with the tool where it shall not be possible for the tool to be operated when either applied or removed.

Compliance is checked by inspection and by manual test.

Annex L
(normative)

Battery tools and battery packs provided with mains connection or non-isolated sources

***Add** the following new subclause:*

L.21.18.Z101 Isolation and disabling device

Tools with an **integral battery** shall either be equipped

— with an isolation device to prevent the risk of injury from mechanical hazards during servicing or **user maintenance**; or

— with a disabling device that prevents unintentional starting of the tool.

An isolation device shall

— provide disconnection of all poles of the **battery** from the serviceable region of the tool;

— be equipped with an unambiguous indication of the state of the disconnection device which corresponds to each position of its manual control (actuator);

— be provided with protection against accidental reconnection.

NOTE 1 Examples of methods to achieve this disconnection include removable jumpers, **integral batteries** that can be disconnected for servicing or **user maintenance**, or an electromechanical **power switch** with a direct mechanical link between the actuator and the contact.

NOTE 2 The risk of accidental reconnection for a **power switch** is addressed by the requirement of 21.18.1.2. The other examples in NOTE 1 achieve this by the necessary actions for reconnection.

A disabling device may be achieved by any of the following:

— a self-restoring or non-self-restoring lock-off device where two separate and dissimilar actions are necessary before the motor is switched on (e.g. a **power switch** which has to be pushed in before it can be moved laterally to close the contacts to start the motor). It shall not be possible to achieve these two actions with a single grasping motion or a straight line motion;

— a removable disabling device provided with the tool where it shall not be possible for the tool to be operated when either applied or removed.

Compliance is checked by inspection and by manual test.

***Add** the following annexes:*

Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

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.

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.

Publication	Year	Title	EN/HD	Year
IEC 60061	2005[1]	Lamp caps and holders together with gauges for the control of interchangeability and safety	-	-
IEC 60065	2001	Audio, video and similar electronic apparatus - Safety requirements	-	-
+ A1	2005		-	-
+ A2	2010		-	-
IEC 60068-2-75	1997	Environmental testing -- Part 2-75: Tests - Test Eh: Hammer tests	-	-
IEC/TR 60083	2015[1]	Plugs and socket-outlets for domestic and similar general use standardized in member countries of IEC	-	-
IEC 60085	2007	Electrical insulation - Thermal evaluation and designation	EN 60085	2008
IEC 60127	series	Miniature fuses	EN 60127	series
IEC 60227	series	Polyvinyl chloride insulated cables of rated voltages up to and including 450/750 V	-	-
IEC 60238	-	Edison screw lampholders	EN IEC 60238	2018
IEC 60245	series	Rubber insulated cables - Rated voltages up to and including 450/750 V	-	-

[1] Dated as no equivalent European Standard exists.

IEC 60252-1	-	AC motor capacitors - Part 1: General - Performance, testing and rating - Safety requirements - Guidance for installation and operation	EN 60252-1	2011
			+ A1	2013
IEC 60320	series	Appliance couplers for household and similar general purposes	EN 60320	series
IEC 60320-1	-	Appliance couplers for household and similar general purposes - Part 1: General requirements	EN 60320-1	2015
IEC 60335-1 (mod)	2010	Household and similar electrical appliances - Safety - Part 1: General requirements	EN 60335-1	2012
-	-		+ A11	2014
-	-		+ AC	2014
-	-		+ A13	2017
IEC 60384-14	-	Fixed capacitors for use in electronic equipment - Part 14: Sectional specification - Fixed capacitors for electromagnetic interference suppression and connection to the supply mains	EN 60384-14	2013
			+ A1	2016
IEC 60417	1973[1]	Graphical symbols for use on equipment. Index, survey and compilation of the single sheets.	-	-
IEC 60529	1989	Degrees of protection provided by enclosures (IP Code)	EN 60529	1991
-	-		+ corrigendum May	1993
+ A1	1999		+ A1	2000
+ A2	2013		+ A2	2013
IEC 60664-1	-	Insulation coordination for equipment within low-voltage systems - Part 1: Principles, requirements and tests	EN 60664-1	2007
IEC 60695-2-11	2000	Fire hazard testing -- Part 2-11: Glowing/hot--wire based test methods - Glow-wire flammability test method for end-products		-
IEC 60695-2-13	2010	Fire hazard testing - Part 2-13: Glowing/hot-wire based test methods - Glow-wire ignition temperature (GWIT) test method for materials	EN 60695-2-13	2010
IEC 60695-10-2	2003	Fire hazard testing -- Part 10-2: Abnormal heat - Ball pressure test	-	-
IEC 60695-11-10	2013	Fire hazard testing - Part 11-10: Test flames - 50 W horizontal and vertical flame test methods	EN 60695-11-10	2013

IEC 60730-1 (mod)	2010	Automatic electrical controls for household and similar use -- Part 1: General requirements	EN 60730-1	2011
IEC 60825-1	2007	Safety of laser products -- Part 1: Equipment classification and requirements	EN 60825-1[2]	2007
IEC 60884	series	Plugs and socket-outlets for household and similar purposes	-	-
IEC 60906-1	2009[1]	IEC system of plugs and socket-outlets for household and similar purposes - Part 1: Plugs and socket-outlets 16 A 250 V a.c.	-	-
IEC 60990	1999	Methods of measurement of touch current and protective conductor current	EN 60990	1999
IEC 60998-2-1 (mod)	-	Connecting devices for low-voltage circuits for household and similar purposes - Part 2-1: Particular requirements for connecting devices as separate entities with screw-type clamping units	EN 60998-2-1	2004
IEC 60998-2-2 (mod)	-	Connecting devices for low-voltage circuits for household and similar purposes - Part 2-2: Particular requirements for connecting devices as separate entities with screwless-type clamping units	EN 60998-2-2	2004
IEC 60999-1	1999	Connecting devices - Electrical copper conductors - Safety requirements for screw-type and screwless-type clamping units - Part 1: General requirements and particular requirements for clamping units for conductors from 0,2 mm2 up to 35 mm2 (included)	EN 60999-1	2000
IEC 61000-4-2	2008	Electromagnetic compatibility (EMC) - Part 4-2: Testing and measurement techniques - Electrostatic discharge immunity test	EN 61000-4-2	2009
IEC 61000-4-3	2006	Electromagnetic compatibility (EMC) - Part 4-3 : Testing and measurement techniques - Radiated, radio-frequency, electromagnetic field immunity test	EN 61000-4-3	2006
+ A1	2007		+ A1	2008
+ A2	2010		+ A2	2010
IEC 61000-4-4	2012	Electromagnetic compatibility (EMC) - Part 4-4: Testing and measurement techniques - Electrical fast transient/burst immunity test	EN 61000-4-4	2012
IEC 61000-4-5	2005	Electromagnetic compatibility (EMC) -- Part 4-5: Testing and measurement techniques - Surge immunity test	-	-
IEC 61000-4-6	2008	Electromagnetic compatibility (EMC) -- Part 4-6: Testing and measurement techniques - Immunity to conducted disturbances, induced by radio-frequency fields	-	-

2 This standard has been withdrawn and replaced by IEC 60825-1:2014.

IEC 61000-4-11	2004	Electromagnetic compatibility (EMC) - Part 4-11: Testing and measurement techniques - Voltage dips, short interruptions and voltage variations immunity tests	EN 61000-4-11	2004
IEC 61032	1997	Protection of persons and equipment by enclosures - Probes for verification	EN 61032	1998
IEC 61056-1	-	General purpose lead-acid batteries (valve-regulated types) - Part 1: General requirements, functional characteristics - Methods of test	EN 61056-1	2012
IEC 61058-1	2000	Switches for appliances -- Part 1: General requirements	-	-
+ A1	2001		EN 61058-1	2002
+ A2	2007		+ A2	2008
IEC 61210 (mod)	-	Connecting devices - Flat quick-connect terminations for electrical copper conductors - Safety requirements	EN 61210	2010
IEC 61540 (mod)	1997	Electrical accessories - Portable residual current devices without integral overcurrent protection for household and similar use (PRCDs)	HD 639 S1	2002
			+ A1	2003
			+ corrigendum Jul.	2003
			+ A2	2010
IEC 61558-1	-	Safety of power transformers, power supplies, reactors and similar products –Part 1: General requirements and tests	EN 61558-1	2019
IEC 61558-2-4	-	Safety of transformers, reactors, power supply units and similar products for supply voltages up to 1 100 V - Part 2-4: Particular requirements and tests for isolating transformers and power supply units incorporating isolating transformers	EN 61558-2-4	2009
IEC 61558-2-6	-	Safety of transformers, reactors, power supply units and similar products for supply voltages up to 1 100 V - Part 2-6: Particular requirements and tests for safety isolating transformers and power supply units incorporating safety isolating transformers	EN 61558-2-6	2009
IEC 61558-2-16	-	Safety of transformers, reactors, power supply units and similar products for supply voltages up to 1 100 V - Part 2-16: Particular requirements and tests for switch mode power supply units and transformers for switch mode power supply units	EN 61558-2-16	2009
			+ A1	2013
IEC 61951-1	-	Secondary cells and batteries containing alkaline or other non-acid electrolytes - Secondary sealed cells and batteries for portable applications - Part 1: Nickel-Cadmium	EN 61951-1	2017