

National Standard of Canada

CSA C22.2 No. 62841-2-3:21

Electric motor-operated hand-held tools, transportable tools and lawn and garden machinery — Safety — Part 2-3: Particular requirements for hand-held grinders, disc-type polishers and disc-type sanders (IEC 62841-2-3:2020, MOD)

Note: For brevity, this Standard will be referred to as “CSA C22.2 No. 62841-2-3” throughout.

JULY 12, 2021

This national standard is based on publication IEC 62841-2-3, First Edition (2020).

*Prepared by
International Electrotechnical Commission*



Reviewed by



CSA Group
CSA C22.2 No. 62841-2-3:21
First Edition
(IEC 62841-2-3:2020, MOD)



Underwriters Laboratories Inc.
UL 62841-2-3
First Edition

ICS 25.140.20



ANSI/UL 62841-2-3-2021

Commitment for Amendments

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CONTENTS

Preface	5
NATIONAL DIFFERENCES	7
FOREWORD	9
1 Scope	13
2 Normative references	13
3 Terms and definitions	13
4 General requirements	17
5 General conditions for the tests	17
6 Radiation, toxicity and similar hazards	17
7 Classification	17
8 Marking and instructions	17
8.14.1.101 Additional safety instructions for grinders, disc-type polishers and disc-type sanders	19
9 Protection against access to live parts	25
10 Starting	25
11 Input and current	25
12 Heating	25
13 Resistance to heat and fire	25
14 Moisture resistance	26
15 Resistance to rusting	26
16 Overload protection of transformers and associated circuits	26
17 Endurance	26
18 Abnormal operation	26
19 Mechanical hazards	27
19.101 Wheel guard	27
19.102 Spindles	29
19.103 Flanges	30
19.104 Flange dimensions	30
19.105 Strength of flanges	34
20 Mechanical strength	35
20.101 Strength of wheel guards of Types A, B, C and D	35
20.102 Strength of wheel guards of Type F	42
20.103 Strength of wheel guards of Type G	43
21 Construction	45
22 Internal wiring	49
23 Components	49
24 Supply connection and external flexible cords	49
25 Terminals for external conductors	49
26 Provision for earthing	49
27 Screws and connections	49
28 Creepage distances, clearances and distances through insulation	49

Annexes

Annex I (informative) Measurement of noise and vibration emissions

I.2 Noise test code (grade 2)	51
I.2.4 Installation and mounting conditions of the power tools during noise tests	51

I.2.5	Operating conditions	51
I.3	Vibration	51
I.3.3.2	Location of measurement	51
I.3.5.3	Operating conditions	52
I.3.5.4	Operator	58
I.3.6.1	Reported vibration value	59
I.3.6.2	Declaration of the vibration total value	59

Annex K (normative) Battery tools and battery packs

K.8.14.1.101.2	Safety instructions for all operations	61
K.8.14.1.101.2DV	Modification: Replace Clause K.8.14.1.101.2 of the Part 2 with the following:	61

Annex L (normative) Battery tools and battery packs provided with mains connection or non-isolated sources

Annex AA (normative) Wheel guard types

Annex BB (informative) Material and thickness of wheel guards

Annex CC (normative) Wheel type specifications

CC.1	General	73
CC.2	Wheel type 1	73
CC.3	Wheel type 4	73
CC.4	Wheel type 6	74
CC.5	Wheel type 11	75
CC.6	Wheel type 27	75
CC.7	Wheel type 28	76
CC.8	Wheel type 29	77
CC.9	Wheel type 41	77
CC.10	Wheel type 42	78

Bibliography

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Preface

This is the harmonized CSA Group and UL Standard for Electric Motor-Operated Hand-Held Tools, Transportable Tools and Lawn and Garden Machinery – Safety – Part 2-3: Particular Requirements for Hand-Held Grinders, Disc-Type Polishers and Disc-Type Sanders. It is the First edition of CSA C22.2 No. 62841-2-3:21 and the First edition of UL 62841-2-3.

This harmonized standard is based on IEC Publication 62841-2-3: First edition, Electric Motor-Operated Hand-Held Tools, Transportable Tools and Lawn and Garden Machinery – Safety – Part 2-3: Particular Requirements for Hand-Held Grinders, Disc-Type Polishers and Disc-Type Sanders, issued April 2020. IEC publication 62841-2-3 is copyrighted by the IEC.

This harmonized standard was prepared by CSA Group and Underwriters Laboratories Inc. (UL). The efforts and support of the International Harmonization Committee (IHC) for the adoption of the IEC series of standards for Hand-Held, Motor-Operated, and Transportable Tools and Lawn and Garden Machinery UL are gratefully acknowledged.

This standard is considered suitable for use for conformity assessment within the stated scope of the standard.

This standard was reviewed by the CSA Subcommittee on Safety of Hand-Held Motor-Operated Electric Tools, under the jurisdiction of the CSA Technical Committee on Consumer and Commercial Products and the CSA Strategic Steering Committee on Requirements for Electrical Safety, and has been formally approved by the CSA Technical Committee. This standard has been developed in compliance with Standards Council of Canada requirements for National Standards of Canada. It has been published as a National Standard of Canada by CSA Group.

Application of Standard

Where reference is made to a specific number of samples to be tested, the specified number is to be considered a minimum quantity.

Note: Although the intended primary application of this standard is stated in its scope, it is important to note that it remains the responsibility of the users of the standard to judge its suitability for their particular purpose.

CSA C22.2 No. 62841-2-3 is to be used in conjunction with the First edition of CAN/CSA-C22.2 No. 62841-1. The requirements for hand-held grinders, disc-type polishers and disc-type sanders are contained in this Part 2 Standard and CAN/CSA-C22.2 No. 62841-1. Requirements of this Part 2 Standard, where stated, amend the requirements of CAN/CSA-C22.2 No. 62841-1. Where a particular subclause of CAN/CSA-C22.2 No. 62841-1 is not mentioned in CSA C22.2 No. 62841-2-3, the CAN/CSA-C22.2 No. 62841-1 subclause applies.

UL Standard 62841-2-3 is to be used in conjunction with the First edition of UL 62841-1. The requirements for hand-held grinders, disc-type polishers and disc-type sanders are contained in this Part 2 Standard and UL 62841-1. Requirements of this Part 2 Standard, where stated, amend the requirements of UL 62841-1. Where a particular subclause of UL 62841-1 is not mentioned in UL 62841-2-3, the UL 62841-1 subclause applies.

Level of harmonization

This standard adopts the IEC text with national differences.

This standard is published as an equivalent standard for CSA Group and UL.

An equivalent standard is a standard that is substantially the same in technical content, except as follows: Technical national differences are allowed for codes and governmental regulations as well as those recognized as being in accordance with NAFTA Article 905, for example, because of fundamental climatic, geographical, technological, or infrastructural factors, scientific justification, or the level of protection that the country considers appropriate. Presentation is word for word except for editorial changes.

All national differences from the IEC text are included in the CSA Group and UL versions of the standard. While the technical content is the same in each organization's version, the format and presentation may differ.

Reasons for Differences From IEC

National differences from the IEC are being added in order to address safety and regulatory situations present in the US and Canada.

Interpretations

The interpretation by the standards development organization of an identical or equivalent standard is based on the literal text to determine compliance with the standard in accordance with the procedural rules of the standards development organization. If more than one interpretation of the literal text has been identified, a revision is to be proposed as soon as possible to each of the standards development organizations to more accurately reflect the intent.

IEC Copyright

For CSA Group, the text, figures, and tables of International Electrotechnical Commission Publication 62841-2-3, Electric Motor-Operated Hand-Held Tools, Transportable Tools and Lawn and Garden Machinery – Safety – Part 2-3: Particular Requirements for Hand-Held Grinders, Disc-Type Polishers and Disc-Type Sanders, copyright 2020, are used in this standard with the consent of the International Electrotechnical Commission. The IEC Foreword is not a part of the requirements of this standard but is included for information purposes only.

These materials are subject to copyright claims of IEC and UL. No part of this publication may be reproduced in any form, including an electronic retrieval system, without the prior written permission of UL. All requests pertaining to the Electric Motor-Operated Hand-Held Tools, Transportable Tools and Lawn and Garden Machinery – Safety – Part 2-3: Particular Requirements for Hand-Held Grinders, Disc-Type Polishers and Disc-Type Sanders, UL 62841-2-3 Standard should be submitted to UL.

NATIONAL DIFFERENCES

National Differences from the text of International Electrotechnical Commission (IEC) Publication IEC 62841-2-3 Electric Motor-Operated Hand-Held Tools, Transportable Tools and Lawn and Garden Machinery – Safety – Part 2-3: Particular Requirements for Hand-Held Grinders, Disc-Type Polishers and Disc-Type Sanders, copyright 2020 are indicated by notations (differences) and are presented in bold text. The national difference type is included in the body.

There are five types of National Differences as noted below. The difference type is noted on the first line of the National Difference in the standard. The standard may not include all types of these National Differences.

DR – These are National Differences based on the **national regulatory requirements**.

D1 – These are National Differences which are based on **basic safety principles and requirements**, elimination of which would compromise safety for consumers and users of products.

D2 – These are National Differences from IEC requirements based on existing **safety practices**. These requirements reflect national safety practices, where empirical substantiation (for the IEC or national requirement) is not available or the text has not been included in the IEC standard.

DC – These are National Differences based on the **component standards** and will not be deleted until a particular component standard is harmonized with the IEC component standard.

DE – These are National Differences based on **editorial comments or corrections**.

Each national difference contains a description of what the national difference entails. Typically one of the following words is used to explain how the text of the national difference is to be applied to the base IEC text:

Addition / Add - An addition entails adding a complete new numbered clause, subclause, table, figure, or annex. Addition is not meant to include adding select words to the base IEC text.

Modification / Modify - A modification is an altering of the existing base IEC text such as the addition, replacement or deletion of certain words or the replacement of an entire clause, subclause, table, figure, or annex of the base IEC text.

Deletion / Delete - A deletion entails complete deletion of an entire numbered clause, subclause, table, figure, or annex without any replacement text.

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FOREWORD

INTERNATIONAL ELECTROTECHNICAL COMMISSION

ELECTRIC MOTOR-OPERATED HAND-HELD TOOLS, TRANSPORTABLE TOOLS AND LAWN AND GARDEN MACHINERY – SAFETY – Part 2-3: Particular requirements for hand-held grinders, disc-type polishers and disc-type sanders

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.

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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 62841-2-3 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
116/444/FDIS	116/454/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 2-3 is to be used in conjunction with the first edition of IEC 62841-1:2014.

This Part 2-3 supplements or modifies the corresponding clauses in IEC 62841-1, so as to convert it into the IEC Standard: Particular requirements for hand-held grinders, disc-type polishers and disc-type sanders.

Where a particular subclause of Part 1 is not mentioned in this Part 2-3, 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.

The terms in **bold typeface** in the text are defined in Clause 3

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

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 publication will remain unchanged until the stability date indicated on the IEC web site under "<http://webstore.iec.ch>" in the data related to the specific publication. At this date, the publication 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.

101DV DE Modification: Add the following to the 7th paragraph of the IEC Foreword:

The numbering system in the standard uses a space instead of a comma to indicate thousands and uses a comma instead of a period to indicate a decimal point. For example, 1 000 means 1,000 and 1,01 means 1.01.

102DV DE Modification: *Replace the 8th paragraph of the IEC Foreword with the following:*

Words in SMALL ROMAN CAPS in the text are defined in Clause [3](#).

103DV DE Modification: *Add the following to the IEC Foreword:*

For this Standard, all references to "Part 1" refer to CAN/CSA-C22.2 No. 62841-1 and UL 62841-1.

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ELECTRIC MOTOR-OPERATED HAND-HELD TOOLS, TRANSPORTABLE TOOLS AND LAWN AND GARDEN MACHINERY – SAFETY – Part 2-3: Particular requirements for hand-held grinders, disc-type polishers and disc-type sanders

1 Scope

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

Addition:

This part of IEC 62841 applies to hand-held GRINDERS, DISC-TYPE POLISHERS and DISC-TYPE SANDERS, including angle, straight and vertical tools, intended for use on various materials except magnesium, with a RATED CAPACITY not exceeding 230 mm. For GRINDERS, the RATED NO-LOAD SPEED does not exceed a peripheral speed of the ACCESSORY of 80 m/s at RATED CAPACITY.

This standard does not apply to dedicated cut-off machines.

NOTE 101 It is planned that a document on cut-off machines will be published.

This standard does not apply to orbital polishers and orbital sanders.

NOTE 102 It is planned that a document on orbital polishers and orbital sanders will be published.

This standard does not apply to die grinders.

NOTE 103 Die grinders are covered by IEC 62841-2-23.

2 Normative references

This clause of Part 1 is applicable except as follows:

Addition:

ISO 525:2013, *Bonded abrasive products – General requirements*

3 Terms and definitions

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

Additional definitions:

3.101

BLOTTER

thin piece of an easily compressible material, between the abrasive product and FLANGE

3.102

DIAMOND WHEEL

metal wheel with continuous or segmented diamond abrasives

3.102.1

DIAMOND CUTTING WHEEL

metal wheel with the abrasives located on the periphery of the wheel

3.102.2

DIAMOND GRINDING WHEEL

metal wheel with abrasives located on the face of the wheel

3.103

DISC-TYPE POLISHER

tool equipped with a rotating flexible disc or pad intended for polishing

Note 101 to entry: Polishing is an operation to produce a smooth or shiny surface.

3.104

DISC-TYPE SANDER

tool, constructed like a GRINDER, intended for sanding

Note 101 to entry: Sanding is an operation to remove material using flexible abrasive material, such as sandpaper.

3.105

FLANGE

collar, disc or plate between or against which wheels are mounted

3.105.1

UNRECESSED (FLANGE)

FLANGE fixed to the machine spindle having an UNRECESSED flat surface against which a threaded hole abrasive product is screwed, e.g. a cup wheel, a cone or a plug

3.105.2

INNER FLANGE

flange which contacts and provides support to the back side of the wheel and is located on the spindle between wheel and tool

3.105.3

OUTER FLANGE

FLANGE which supports the front side of the wheel and secures and clamps the wheel to the spindle and the INNER FLANGE

Note 101 to entry: In Canada and the United States of America, the following additional definition applies:

3.105.UC1

ADAPTOR BACKING FLANGE

INNER FLANGE which contacts and supports in the hub area and extends past the raised portion to reduce the flexing of the wheel periphery

3.106

GRINDER

tool driving a rotating spindle on which a bonded abrasive product or a DIAMOND WHEEL is mounted

3.106.1

ANGLE GRINDER

GRINDER with the rotating spindle at an angle to the axis of the tool body which acts as a grasping surface, intended for peripheral and lateral grinding

Note 101 to entry: See [Figure 101](#).

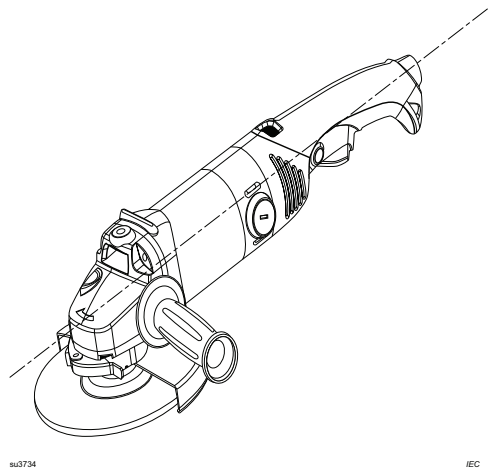


Figure 101
Example of an angle grinder

3.106.2

STRAIGHT GRINDER

GRINDER with the rotating spindle in-line with the axis of the tool body which acts as a grasping surface, intended for peripheral grinding only and not equipped with a collet or chuck

Note 101 to entry: See [Figure 102](#).

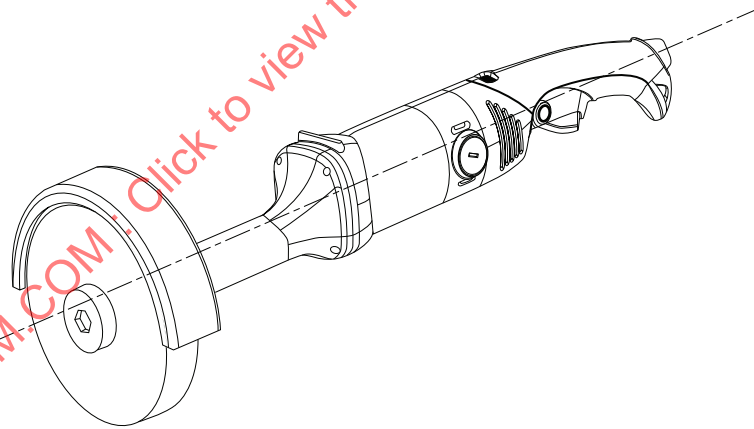


Figure 102
Example of a straight grinder

3.106.3

VERTICAL GRINDER

GRINDER with the rotating spindle in-line with the axis of the tool body and with handles that are substantially perpendicular to the axis of the rotating spindle, intended for peripheral and lateral grinding

Note 101 to entry: See [Figure 103](#).