IEC 62841-3-9

Edition 2.0 2020-02
REDLINE VERSION

INTERNATIONAL STANDARD

colour inside

Electric motor-operated hand-held tools, transportable tools and lawn and garden machinery – Safety –
Part 3-9: Particular requirements for transportable mitre saws

IEC 62841-3-9:2020-02 RLV(en)

IEC Central Office
3, rue de Varembé
CH-1211 Geneva 20
Switzerland

Tel.: +41 22 919 02 11
info@iec.ch
www.iec.ch

About the IEC
The International Electrotechnical Commission (IEC) is the leading global organization that prepares and publishes International Standards for all electrical, electronic and related technologies.

About IEC publications
The technical content of IEC publications is kept under constant review by the IEC. Please make sure that you have the latest edition, a corrigendum or an amendment might have been published.

IEC publications search - webstore.iec.ch/advsearchform
The advanced search enables to find IEC publications by a variety of criteria (reference number, text, technical committee,…). It also gives information on projects, replaced and withdrawn publications.

IEC Just Published - webstore.iec.ch/justpublished
Stay up to date on all new IEC publications. Just Published details all new publications released. Available online and once a month by email.

IEC Customer Service Centre - webstore.iec.ch/csc
If you wish to give us your feedback on this publication or need further assistance, please contact the Customer Service Centre: sales@iec.ch.

Electropedia - www.electropedia.org
The world's leading online dictionary on electrotechnology, containing more than 22 000 terminological entries in English and French, with equivalent terms in 16 additional languages. Also known as the International Electrotechnical Vocabulary (IEV) online.

IEC Glossary - std.iec.ch/glossary
67 000 electrotechnical terminology entries in English and French extracted from the Terms and Definitions clause of IEC publications issued since 2002. Some entries have been collected from earlier publications of IEC TC 37, 77, 86 and CISPR.

IEC 62841-3-9

Edition 2.0 2020-02
REDLINE VERSION

INTERNATIONAL STANDARD

colour inside

Electric motor-operated hand-held tools, transportable tools and lawn and garden machinery – Safety –
Part 3-9: Particular requirements for transportable mitre saws

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

ICS 25.140.20

ISBN 978-2-8322-7893-2

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

CONTENTS

INTERNATIONAL ELECTROTECHNICAL COMMISSION

_____

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

Part 3-9: Particular requirements for transportable mitre 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.

This redline version of the official IEC Standard allows the user to identify the changes made to the previous edition. A vertical bar appears in the margin wherever a change has been made. Additions are in green text, deletions are in strikethrough red text.

International Standard IEC 62841-3-9 has been prepared by IEC technical committee 116: Safety of motor-operated electric tools.

This second edition cancels and replaces the first edition published in 2014. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

a) Clause 1: Scope: increase of the maximum saw blade diameter to 410 mm;
b) Corrigendum 1 and Corrigendum 2 of the first edition have been incorporated in this second edition.

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

FDIS	Report on voting
116/430/FDIS	116/442/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 publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

This Part 3-9 is to be used in conjunction with the IEC 62841-1:2014.

This Part 3-9 supplements or modifies the corresponding clauses in IEC 62841-1, so as to convert it into the IEC Standard: Particular requirements for transportable mitre saws.

Where a particular subclause of Part 1 is not mentioned in this Part 3-9, that subclause applies as far as reasonable. 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 defined in Clause 3 are printed in **bold typeface**.

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.

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 3-9: Particular requirements for transportable mitre saws

1 Scope

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

Addition:

This part of IEC 62841 applies to transportable **mitre saws** intended to be used with a toothed saw blade for cutting wood and analogous materials, plastics and nonferrous metals except magnesium with a saw blade diameter not exceeding ~~360~~ 410 mm, which hereinafter might simply be referred to as saw or tool.

This International Standard does not apply to **mitre saws** intended to cut other metals, such as magnesium, steel and iron. This document does not apply to **mitre saws** with an automatic feeding device.

NOTE 101 Transportable saws intended to cut ferrous metals will be covered by a future part of IEC 62841-3.

This document does not apply to saws designed for use with abrasive wheels.

NOTE 102 **Transportable tools** designed for use with abrasive wheels are covered by IEC 62841-3-10.

This document does not apply to tools combining the function of a **mitre saw** with the function of a table saw.

NOTE 103 **Transportable tools** combining the function of a **mitre saw** with the function of a table saw are covered by ~~IEC 62841-3-11~~ a future part of IEC 62841-3.

2 Normative references

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

Addition:

ISO 180, *Plastics – Determination of Izod impact strength*

3 Terms and definitions

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

~~*Addition:*~~

3.101
bevel angle
angular displacement of the saw blade plane with respect to the **table top** plane, the position of the saw blade plane that is perpendicular to the **table top** being the 0° bevel position

3.102
compound angle
angular displacement of the saw blade plane having a **bevel** and **mitre angle** other than 0°

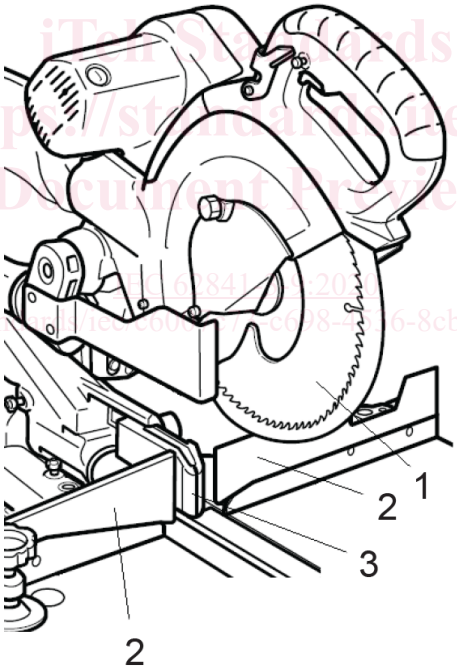
3.103
cutting edge zone
outer 20 % of the radius of the saw blade

3.104
D
specified diameter of the saw blade

3.105
fence
device to position the workpiece and absorb the horizontal forces from the saw blade during the cutting process

3.105.1
centre workpiece support
device that has a face supporting the workpiece in conjunction with the **fence**

Note 1 to entry: See Figure 101.



IEC

Key

1 saw blade

2 **fences**

3 **centre workpiece support**

Figure 101 – Mitre saw with centre workpiece support

3.106
fully down position
position of the **saw unit** after adjustment of the saw in accordance with 8.14.2 a) 107) and any depth-of-cut stop as in 8.14.2 a) 108) disengaged or adjusted in order to produce the lowest position of the **saw unit**

3.107
horizontal cutting capacity
largest dimension perpendicular from the plane of the **fence** (width) of a workpiece with rectangular cross section that can be completely cut through with a single pass of the saw blade

Note 1 to entry: Subclause 5.101 provides a measurement procedure for **horizontal cutting capacity**.

3.108
kerf width
distance between two parallel planes that are touching the opposing sides of at least three saw blade tooth tips

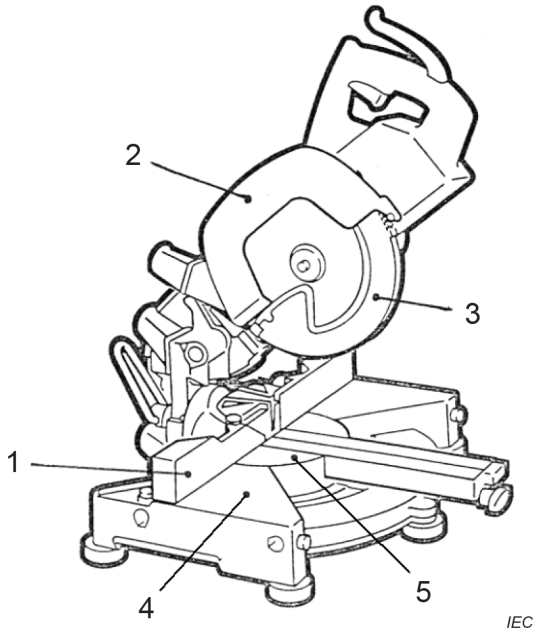
3.109
kerf plate
portion of the **table top** on both sides of the saw blade intersect line with the **table top** for the purpose of minimizing the tearing of the wood fibres by the saw blade

Note 1 to entry: Depending on the design, the **kerf plate** is adjustable, replaceable or an integral part of the **table top**.

3.110
mitre angle
angular displacement of the plane of the **fence** with respect to the cutting line, the position of the saw blade plane that is perpendicular to the plane of the **fence** being the 0° mitre position

3.111
mitre saw
saw consisting of a **table top** and a **fence** which support and position the workpiece, and a **saw unit**, projecting over the **table top**

Note 1 to entry: Cutting is achieved by moving the **saw unit** through a plunging action or a combination of plunging and sliding actions. The workpiece does not move with respect to the **table top** or **fence** during cutting. The **saw unit** can be adjustable to cut at a **bevel angle**, a **mitre angle** or both angles to create a **compound angle** cut. See Figure 102.



Key

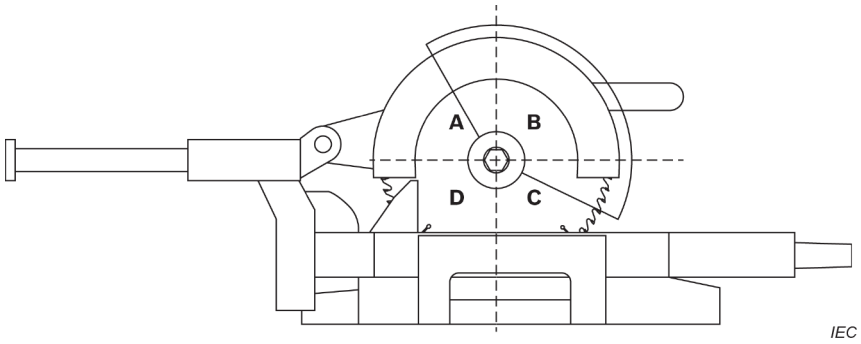
1 **fence**
2 upper **guard**
3 lower **guard**
4 table base
5 **turn table**

Figure 102 – Mitre saw

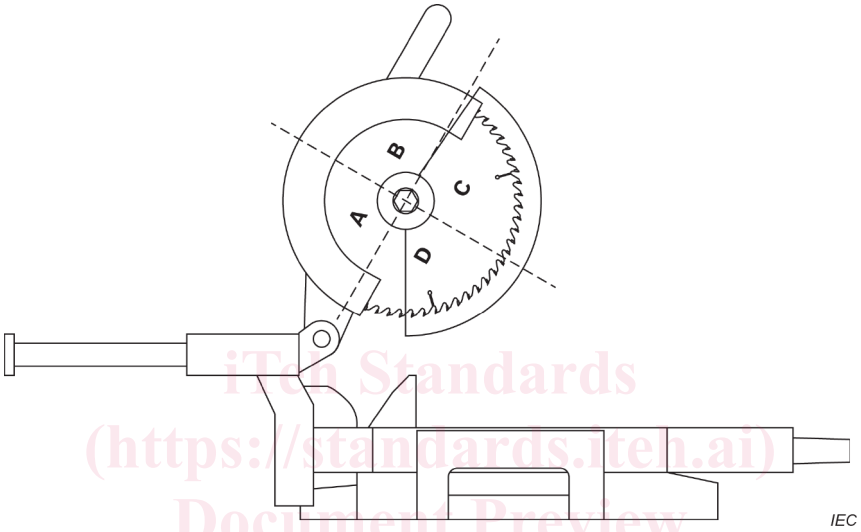
3.112
quadrants ~~(of the saw blade)~~
with the **saw unit** in the **fully down position**, parts of the saw blade ~~quadrants are~~ defined by two lines intersecting the centre of the saw blade, where one line is parallel to the **table top** and the other line is perpendicular to the first line

Note 1 to entry: The **quadrants** remain fixed in relation to the **saw unit** as it moves between the **rest position** and the **fully down position** (see Figure 103):

– **quadrant** “A” is above the line parallel to the **table top** and away from the operator’s position;
– **quadrant** “B” is above the line parallel to the **table top** and closer to the operator’s position;
– **quadrant** “C” is below the line parallel to the **table top** and closer to the operator’s position;
– **quadrant** “D” is below the line parallel to the **table top** and away from the operator’s position.



a) Saw unit in fully down position



b) Saw unit in rest position

Figure 103 – Saw blade quadrants

3.113
rest position
position of a **saw unit** in its uppermost position from the **table top** and, for **mitre saws** with a sliding action, at the maximum sliding position towards the **fence**

3.114
saw unit
device with an affixed saw blade, capable of performing a cutting action

3.115
table top
horizontal surface that is in contact with and supports the workpiece and typically consists of a **turn table,** a table base on each side of the **turn table** and workpiece support extension(s)

Note 1 to entry: See Figure 102.

3.116
turn table
workpiece supporting device that facilitates the **mitre angle** adjustment

3.117
vertical cutting capacity
largest height dimension above the **table top** (thickness) of a workpiece with rectangular cross section having a width dimension equal to the **horizontal cutting capacity**, that can be completely cut through with a single pass of the saw blade

4 General requirements

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

~~*Addition:*~~

4.101 Throughout the remaining part of this document, unless otherwise explicitly stated, whenever a requirement or a reference is made to

– "saw blade":

this shall equally apply to any "saw blade" as specified in accordance with 8.14.2 a);

– "force" as a multiple of ***D***:

the force shall be expressed in newtons (N) and the saw blade diameter ***D*** shall be expressed in millimetres (mm).

5 General conditions for the tests

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

5.17 *Addition:*

*The mass of the tool shall include the **fences** and required workpiece clamp(s) in accordance with 21.103 and 21.104. Further parts such as carrying means that are required in accordance with the instructions for the safe use of the tool shall be included in the mass.*

5.101 Procedure to determine the horizontal cutting capacity

*The **mitre saw** is fitted with a (2 ± 0,2) mm thick steel disc of diameter **D** in place of the saw blade and is set to 0° **bevel angle**. The **saw unit** is at its **fully down position** and, for a **mitre saw** with a sliding function, the **saw unit** is at its maximum extended horizontal position from the **fence**. The **mitre saw** is set for the **mitre angle** for which the **horizontal cutting capacity** measurement is desired.*

***Horizontal cutting capacity**:*

*The **horizontal cutting capacity** is the perpendicular distance measured in the plane of the **table top** from the **fence** to the intersect point of the steel disc periphery in **quadrant** "C" with the plane of the **table top**.*

6 Radiation, toxicity and similar hazards

This clause of Part 1 is applicable.

7 Classification

This clause of Part 1 is applicable.

8 Marking and instructions

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