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INTERNATIONAL STANDARD

NORME INTERNATIONALE

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Electric motor-operated hand-held tools, transportable tools and lawn and garden machinery – Safety – Part 3-1: Particular requirements for transportable table saws

Outils électroportatifs à moteur, outils transportables et machines pour jardins et pelouses – Sécurité – Partie 3-1: Exigences particulières pour les scies circulaires à table transportables

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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 –

Part 3-1: Particular requirements for transportable table saws

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IEC 62841-3-1 edition 1.1 contains the first edition (2014-06) [documents 116/168/FDIS and 116/182/RVD] and its corrigendum (2015-11), and its amendment 1 (2021-03) [documents 116/485/FDIS and 116/492/RVD].

In this Redline version, a vertical line in the margin shows where the technical content is modified by amendment 1. Additions are in green text, deletions are in strikethrough red text. A separate Final version with all changes accepted is available in this publication.

International Standard IEC 62841-3-1 has been prepared by IEC technical committee 116: Safety of motor-operated electric tools.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

This Part 3-1 is to be used in conjunction with the first edition of IEC 62841-1 (2014).

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

Where a particular subclause of Part 1 is not mentioned in this Part 3-1, 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 the base publication and its amendment 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 3-1: Particular requirements for transportable table saws

1 Scope

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

Addition:

This part of IEC 62841 applies to transportable **table saws** with

– a toothed single blade; or

– stacked blades that cut a single groove or slot; or

– a moulding head cutter

intended for cutting wood and analogous materials, plastics and nonferrous metals except magnesium with a saw blade diameter between 105 mm and 315 mm, which hereinafter may simply be referred to as saw or tool.

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

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

NOTE 101 Saws designed for use with abrasive wheels as cut-off machines are covered by IEC 62841-3-10.

This standard does not apply to **table saws** with more than one spindle such as for a scoring blade.

NOTE 102 In Europe (EN 62841-3-1), the following conditions apply:

This standard applies to **table saws** having a mass of:

– maximum 25 kg for tools capable of being lifted by hand by one person;

– maximum 50 kg for tools capable of being lifted by hand by two persons.

This standard does not apply to stationary **table saws**.

2 Normative references

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

Addition:

ISO 180:2019, *Plastics – Determination of Izod impact strength*

NOTE In Europe (EN 62841-3-1), the following normative reference applies:

EN 847-1, *Tools for woodworking – Safety requirements – Part 1: Milling tools, circular saw blade*

3 Terms and definitions

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

Addition:

3.101
anti-kickback device
device that allows the movement of the workpiece in the cutting direction but reduces the likelihood of the rapid movement of the workpiece in the direction opposite of feed

3.102
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

3.103
cross cutting
any cutting operation performed utilizing a **cross-cutting fence** to guide the workpiece.

Note 1 to entry: For natural wood, a cross cut is performed predominantly in a perpendicular direction with the grain of the wood; for engineered materials, a cross cut is performed perpendicular to the length of the workpiece.

3.104
cutting capacity
for any depth setting of the saw blade at 0° bevel position, the height of the highest saw blade tooth tip above the **table top**

Note 1 to entry: For any depth setting of the saw blade, at **bevel angles** other than 0°, the height of the highest saw blade tooth tip above the **table top**, but only the side of the tooth closest to the table is considered.

3.104.1
maximum cutting capacity
cutting capacity at the maximum depth setting of the saw blade and, unless otherwise specified, at 0° bevel

3.105
cutting edge zone
the outer 20 % of the radius of the saw blade

3.106
D
specified diameter of the saw blade

3.107
dadoing
non-through cutting operation performed with a stack of specially designed saw blades of a desired thickness to produce a rectangular sided slot in the workpiece

3.108
fence
device to guide or position the workpiece during the cutting process

3.108.1
cross-cutting fence
fence that is designed to move parallel with the plane of the saw blade during the cutting process or to position the workpiece for a **table saw with sliding function**

Note 1 to entry: The **fence** may have provisions to adjust the workpiece guiding face laterally and may have **mitre angle** capability.

Note 2 to entry: A **cross-cutting fence** with **mitre angle** capability is also known as a mitreing **fence** or mitre gauge.

3.108.2
rip fence
fence that has the workpiece guiding face parallel with the plane of the saw blade and can be set to a desired distance from the saw blade

3.109
grooving
series of repeated non-through cuts of same or different depth and spacing from each other, performed with an ordinary saw blade, to remove material for the purpose of creating a slot or for shaping or bending the workpiece

Note 1 to entry: **Grooving** is also known as slotting or kerfing.

3.110
kerf width
maximum distance between two parallel planes that are touching the opposing sides of at least three saw blade tooth tips

3.111
kickback
sudden reaction to a pinched, jammed or misaligned workpiece with respect to the saw blade, which causes the workpiece to be propelled by the saw blade

3.112
mitre angle
angular displacement of the plane of the **cross-cutting fence** with respect to the cutting line, the position of the saw blade plane that is perpendicular to the plane of the **cross-cutting fence** being the 0° mitre position

3.113
moulding head cutting
non-through cutting operation performed with a specially shaped cutting device which produces a corresponding shape of the cutter on the bottom surface of the workpiece, predominantly used for decoration

Note 1 to entry: **Moulding head cutting** is also known as shaping.

3.114
non-removable (device)
device that is welded, riveted or utilizing non-standard simple fasteners and cannot be removed with ordinary household tools, such as slotted or Philips-tip screwdrivers and/or simple wrenches

3.115
non-through cutting
any cutting operation where the cutting device does not protrude beyond the thickness of the workpiece

3.116
plowing
non-through cutting operation performed by moving a workpiece over an ordinary saw blade utilizing a special **fence** that is not parallel to the cutting line of the saw blade, and in very small increments increasing the depth of the cut after each pass to shave off large, arcing surface areas

Note 1 to entry: **Plowing** is also known as cove cutting.

3.117
plunge cutting
non-through cutting operation starting at a location other than the edge of a workpiece

Note 1 to entry: The cut is typically performed by first securing the workpiece over the stationary saw blade lowered below the **table top** and then by slowly raising the rotating saw blade into the workpiece. The saw blade can be raised to fully cut through the thickness of the workpiece before the workpiece is advanced by guiding it with a rip or **cross-cutting fence**.

3.118
quadrant
portion of the saw blade section above the plane of the **table top** with a perpendicular boundary line going through the centre of the saw blade

Note 1 to entry: The saw blade **quadrant** from the centre of the saw blade to the intersect point of the saw blade with the **table top** at the front of the **table saw** is called the “front **quadrant**”, the saw blade **quadrant** at the back of the **table saw** is called the “rear **quadrant**”. See Figure 107.

3.119
rabbeting
non-through cutting operation creating a rectangular notch in the edge of a workpiece where the notch is either cut by dado blades or by two non-though cuts perpendicular to each other, performed with an ordinary saw blade on the side and the bottom edge of the workpiece

Note 1 to entry: **Rabbeting** is also known as rebating.

3.120
resawing
combination of two non-through cuts performed with an ordinary saw blade in the same plane but on opposite sides of a workpiece that result in reducing the thickness of the workpiece

3.121
rip cutting
any cutting operation performed utilizing a **rip fence** to guide the workpiece

Note 1 to entry: For natural wood, a rip cut is performed predominantly in a parallel direction with the grain of the wood; for engineered materials, a rip cut is performed parallel with the length of the workpiece.

3.122
riving knife
device located behind and in the plane of the saw blade, within the **cutting capacity** of the saw blade and in a fixed proximity to the saw blade through an entire depth of cut and **bevel angle** operating range of the saw blade, with an intended function to reduce the risk of saw blade pinching and binding

3.123
extended riving knife
device, in all aspects identical to a **riving knife** except it extends above the **maximum cutting capacity** of the saw blade to allow the mounting of a **saw blade guard** and/or an **anti-kickback device**

3.123.1
adjustable extended riving knife
device designed to function at least in one position as an **extended riving knife** and in a second position as a **riving knife**

3.123.2
fixed extended riving knife
extended riving knife that is fixed in position

3.124
saw blade guard
device mounted above the table such that a workpiece will pass between the mounted device and the table, designed to minimize inadvertent blade contact by the user

3.124.1
over-arm saw blade guard
saw blade guard suspended from a device above the table such that the mounting structure for the **saw blade guard** is not in the workable range of the **table top** plane

3.125
table saw
tool with a rotating toothed saw blade that projects through a slot in a table which supports and positions the workpiece, where the workpiece is fed towards the saw blade and the motor and drive assembly for the saw blade are located below the **table top**

3.125.1
table saw with sliding function
tool with a rotating toothed saw blade that projects through a slot in a table which supports and positions the workpiece, where the motor and drive assembly for the saw blade are located below the **table top** and mounted to a linear carriage system capable of advancing the saw blade drive assembly and where the workpiece is held stationary with the **cross-cutting fence** while the cutting saw blade is advanced through the workpiece

Note 1 to entry: The saw blade is either returned manually or automatically. These saws have a separate lockable rip-cutting position.

Note 2 to entry: These saws are also known as pull type saws.

3.126
table top
surface of the saw table which is in contact with and supports the workpiece

3.127
tapered cut
cut performed utilizing a fixture to hold the workpiece such that the straight edge of the workpiece is not parallel to the cutting line of the saw blade

Note 1 to entry: The fixture is guided by the **rip fence**.

3.128
through cutting
any cutting operation where the saw blade protrudes beyond the thickness of the workpiece

3.129
zero clearance table insert
table insert that is manufactured without any slot for the saw blade, with the intention that the slot in the table insert will be cut after installation in the **table saw** by the actual saw blade installed in the **table saw**

4 General requirements

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

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);

– "**riving knife**":
this shall equally apply to "**extended riving knife**", but not vice versa.
This terminology rule does not apply to "**riving knife** position" i.e. the "**riving knife** position" cannot be substituted with an "**extended riving knife** position";

– "force" as multiple of ***D***:
the force shall be measured in N and the saw blade diameter ***D*** shall be measured in 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 **saw blade guard**, **anti-kickback device**, if any, **riving knife**, **rip fence**, **cross-cutting fence** and the push stick.*

Any additional parts such as leg sets or carrying means that are required in accordance with the user instructions shall be included in the mass.

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:

8.1 *Addition:*

Table saws shall be marked with:

– rated no-load speed of the output spindle.

8.2 *Addition:*

NOTE 101 In the United States of America, the following additional requirements apply.

The following statements shall be verbatim:

a) DANGER – Never place your hands in the vicinity or in line with the saw blade.

b) WARNING – "Wear eye protection".

NOTE 102 It is possible to replace the above verbatim text with symbol M004 of ISO 7010 (2011-05).

c) WARNING – Always use a properly functioning saw-blade guard, riving knife and anti-kickback device for every operation for which it can be used, including all through sawing.

NOTE 103 If an **anti-kickback device** is not provided, the text is revised as follows:

WARNING – Always use a properly functioning saw-blade guard and riving knife for every operation for which it can be used, including all through sawing.

NOTE 104 It is possible to replace the term "**anti-kickback device**" with "anti-**kickback** pawls" or "anti-**kickback** rollers".

d) WARNING – Use a push-stick or push-block when required.