

INTERNATIONAL STANDARD

NORME INTERNATIONALE

**Electric motor-operated hand-held tools, transportable tools and lawn and garden machinery – Safety –
Part 3-11: Particular requirements for transportable combined mitre and bench
saws**

**Outils électroportatifs à moteur, outils portables et machines pour jardin et
pelouses – Sécurité –**

**Partie 3-11: Exigences particulières pour les scies circulaires combinées à
onglet et à table transportables**





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Document Preview

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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

**Part 3-11: Particular requirements for transportable
combined mitre and bench saws**

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IEC 62841-3-11 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
116/802/FDIS	116/824/RVD

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

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

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 transportable combined mitre and bench saws.

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.

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/standardsdev/publications.

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
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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.

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

Part 3-11: Particular requirements for transportable combined mitre and bench saws

1 Scope

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

Addition:

This part of IEC 62841 applies to transportable **combined mitre and bench 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 315 mm, which hereinafter is simply referred to as saw or tool.

This document does not apply to

- saws intended to cut other metals, such as magnesium, steel and iron, or food;
- saws with an automatic feeding device;
- saws designed for use with abrasive wheels;
- saws designed for use with dado blades;
- single function bench or table saws;
- single function mitre saws;

– **combined mitre and bench saws** other than transportable.

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

NOTE 102 **Transportable tools** designed for use with abrasive wheels are covered by IEC 62841-3-10:2015.

NOTE 103 Transportable table saws are covered by IEC 62841-3-1:2014.

NOTE 104 Transportable mitre saws are covered by IEC 62841-3-9:2020.

NOTE 105 In Europe (EN IEC 62841-3-11), the following additional NOTE applies:

NOTE Z101 **Combined mitre and bench saws** other than transportable are covered by EN 1870-3:2014.

2 Normative references

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

Addition:

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

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

NOTE 101 In Europe (EN IEC 62841-3-11), the following additional normative reference applies:

EN 847-1:2017, *Tools for woodworking – Safety requirements – Part 1: Milling tools, circular saw blades*

3 Terms and definitions

IEC 62841-1:2014, Clause 3 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

centre workpiece support

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

Note 101 to entry: See Figure 118.

3.104

combined mitre and bench saw

saw intended to be used as a down-cutting cross cut saw and as a circular bench saw

Note 101 to entry: The two possible types of saw are type "A" and type "B", as defined in 3.104.1 and 3.104.2.

3.104.1

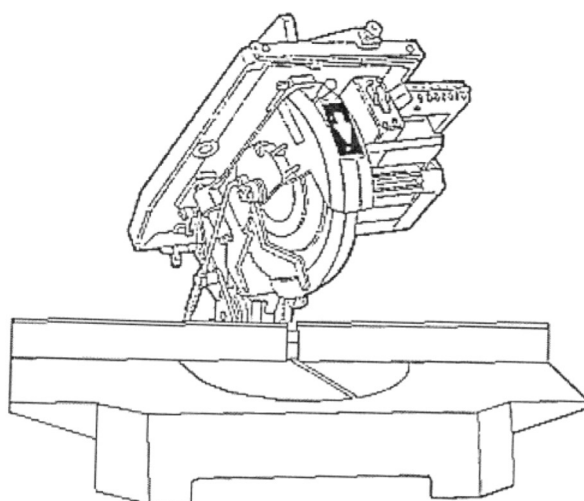
type "A" saw

combined mitre and bench saw equipped with two tables: a mitre saw table having a **fence** to support the material to be cut as the saw blade is brought down and a bench saw table which supports the material to be cut as it is fed by hand towards the saw blade

Note 101 to entry: In mitre saw mode, the saw blade is suspended over the mitre saw table from an arm, normally from a point located at the table or on a part of the frame of the tool. A sliding cutting movement can follow a downward cutting action or vice-versa.

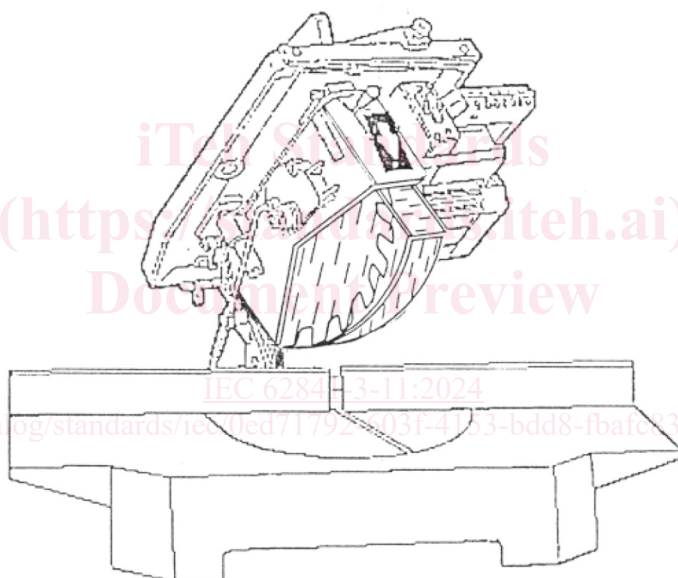
Note 102 to entry: In bench saw mode, the saw blade projects through a slot in the bench saw table.

Note 103 to entry: See Figure 101.



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a) Example provided with U-shaped guard



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b) Example provided with open guard construction

Figure 101 – Combined mitre and bench saw (type "A")

3.104.2

type "B" saw

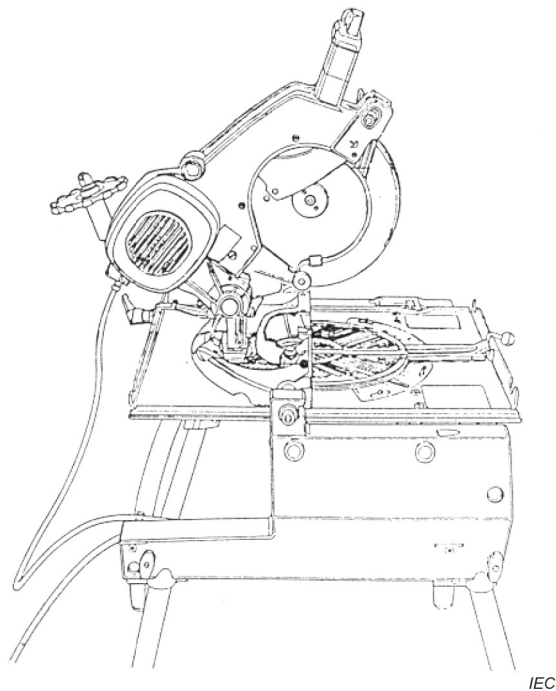
combined mitre and bench saw equipped with a single table which supports and positions the workpiece during mitre and bench sawing operations

Note 101 to entry: The saw blade is capable of being located either above or below the table.

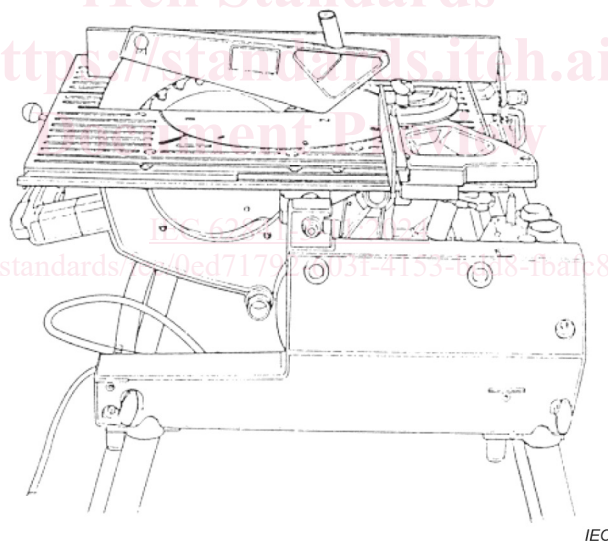
Note 102 to entry: In mitre saw mode, the saw blade is suspended over the table from an arm, normally from a point located at the table or on a part of the frame of the tool. In some cases, a sliding movement follows a downward cutting action or vice-versa.

Note 103 to entry: In bench saw mode, the saw blade projects through a slot in the table.

Note 104 to entry: See Figure 102.



a) Example in mitre saw position



b) Example in bench saw position

Figure 102 – Combined mitre and bench saw (type "B")

3.105

cross cutting

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

Note 101 to entry: For natural wood, **cross cutting** is performed predominantly in a perpendicular direction with the grain of the wood; for engineered materials, **cross cutting** is performed perpendicular to the length of the workpiece.

3.106
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 101 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.

3.106.1
maximum cutting capacity

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

3.107**D**

maximum specified diameter of the saw blade

3.108
dadoing

non-through cutting operation performed with a saw blade using one or more cuts to produce a rectangular sided slot in the workpiece

3.109**fence**

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

3.109.1**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 101 to entry: Some **cross-cutting fences** have provisions to adjust the workpiece guiding face laterally and/or have **mitre angle** capability.

3.109.2**rip fence**

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

3.110**fully down position**

position of the **saw unit** after adjustment of the saw in accordance with 8.14.2 a) 105) and any depth-of-cut stop as in 8.14.2 a) 107) disengaged or adjusted in order to produce the lowest position of the **saw unit**

3.111**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 101 to entry: **Grooving** is also known as slotting or kerfing.

3.112**kerf width**

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

3.113**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

3.114**linked action**

action of opening and closing of the **guard** related to the corresponding up and down movement of the **saw unit**

3.115**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

3.116**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

Note 101 to entry: **Moulding head cutting** is also known as shaping.

Note 102 to entry: **Moulding head cutting** is predominantly used for decoration.

3.117**non-removable**

welded, riveted or secured utilizing non-standard simple fasteners and not removable with ordinary household tools, such as slotted or Philips-tip screwdrivers and/or simple wrenches

3.118**non-through cutting**

cutting operation where the cutting device does not protrude beyond the thickness of the workpiece

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3.119**plowing**

non-through cutting operation performed by moving a workpiece over an ordinary saw blade in bench saw mode utilizing a special **fence** that is not parallel with 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 101 to entry: **Plowing** is also known as cove cutting.

3.120**plunge cutting**

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

Note 101 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 fence** or **cross-cutting fence**.

3.121**rabbeting**

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

Note 101 to entry: **Rabbeting** is also known as rebating.

3.122**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

3.123**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

3.123.1**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**extended riving knife**

device 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**, an **anti-kickback device** or both

3.123.3**fixed extended riving knife**

extended riving knife that is fixed in position

3.124**rip cutting**

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

Note 101 to entry: For natural wood, **rip cutting** is performed predominantly in a parallel direction with the grain of the wood; for engineered materials, **rip cutting** is performed parallel with the length of the workpiece.

3.125**saw unit**

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

3.126**saw blade guard**

device designed to minimize inadvertent contact of the blade, being either a **top guard** or a **lower guard**

3.126.1**lower guard**

movable self-closing and blade-covering **saw blade guard** in mitre saw mode

Note 101 to entry: The **lower guard** covers the saw blade below the **table top** in bench saw mode.

3.126.2**over-arm saw blade guard**

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

3.126.3**top guard**

saw blade guard mounted above the **table top** in bench saw mode such that a workpiece will pass between the mounted device and the **table top**