

# INTERNATIONAL STANDARD

# NORME INTERNATIONALE

**Electric motor-operated hand-held tools, transportable tools and lawn and garden machinery – Safety –  
Part 3-7: Particular requirements for transportable wall saws**

**Outils électroportatifs à moteur, outils portables et machines pour jardins et pelouses – Sécurité –  
Partie 3-7: Exigences particulières pour les scies murales portables**



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INTERNATIONAL  
ELECTROTECHNICAL  
COMMISSION

COMMISSION  
ELECTROTECHNIQUE  
INTERNATIONALE

ICS 25.140.20

ISBN 978-2-8322-8443-8

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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

**Part 3-7: Particular requirements for transportable wall 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.
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International Standard IEC 62841-3-7 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
116/455/FDIS	116/461/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 3-7 is to be used in conjunction with IEC 62841-1:2014.

This Part 3-7 supplements or modifies the corresponding clauses in IEC 62841-1, so as to convert it into the IEC Standard: Particular requirements for transportable wall saws.

Where a particular subclause of Part 1 is not mentioned in this Part 3-7, 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 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 document will remain unchanged until the stability date indicated on the IEC website under "<http://webstore.iec.ch>" in the data related to the specific document. At this date, the document 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.

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

## Part 3-7: Particular requirements for transportable wall saws

### 1 Scope

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

*Replacement of the third paragraph:*

The **rated voltage** is not more than 250 V for single-phase a.c. or d.c. tools, and 480 V for three-phase a.c. tools.

*Addition:*

This document applies to transportable **wall saws** guided by a **track guiding system** intended for dry cutting or to be connected to a **liquid system** for cutting concrete, stone or similar material by means of a **diamond wheel**. The rated speed of the **diamond wheel** does not exceed a peripheral speed of 100 m/s at **rated capacity**.

This document does not apply to transportable **wall saws** that are intended to be left unattended while performing an operation.

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This document does not apply to ~~transportable wall saws~~ that employ hydraulic systems.

This document does not apply to hand-held cut-off machines.

NOTE 101 Hand-held cut-off machines will be covered by a future part of IEC 62841-2.

### 2 Normative references

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

*Replacement of normative reference ISO 3744:*

ISO 3744:2010, *Acoustics – Determination of sound power levels and sound energy levels of noise sources using sound pressure – Engineering methods for an essentially free field over a reflecting plane*

*Replacement of normative reference ISO 11201:*

ISO 11201:2010, *Acoustics – Noise emitted by machinery and equipment – Determination of emission sound pressure levels at a work station and at other specified positions in an essentially free field over a reflecting plane with negligible environmental corrections*



*Addition:*

IEC 61008-1:2010, *Residual current operated circuit-breakers without integral overcurrent protection for household and similar uses (RCCBs) – Part 1: General rules*

IEC 61008-1:2010/AMD1:2012

IEC 61008-1:2010/AMD2:2013

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

ISO 6603-1, *Plastics – Determination of puncture impact behaviour of rigid plastics – Part 1: Non-instrumented impact testing*

### 3 Terms and definitions

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <http://www.iso.org/obp>

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

#### 3.36 *Addition:*

NOTE 101 to entry: The primary function of a **wall saw** is the operation of the **diamond wheel**.

#### 3.58 *Modification:*

Item g) is not applicable.

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#### 3.101

##### **diamond wheel**

metal wheel with a continuous or segmented abrasive rim

#### 3.102

##### **flange**

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

#### 3.103

##### **rated capacity**

maximum intended diameter of the **diamond wheel** to be fitted on the tool as recommended by the manufacturer's instructions

#### 3.104

##### **remote connection**

active communication between the tool and **remote control**, either wired or wireless

#### 3.105

##### **remote control**

unit with an enclosure separate from the **wall saw** with user controls consisting of at least a **power switch** for attended operation of the **wall saw**

Note 1 to entry: Controlling a **wall saw** with a **remote control** provides improved ergonomics for the operator.

#### 3.106

##### **saw unit**

unit on which the **diamond wheel**, the **wheel guard** and the interface to connect it to the **track guiding system** are mounted

**3.107**  
**track guiding system**

device for guiding the **saw unit** during the cutting operation and which is mounted to the workpiece

**3.108**  
**wall saw**

tool designed to saw or groove concrete, stone or similar material, consisting of a **saw unit** and a **track guiding system**, which are combined for **normal operation** by a suitable interface and operated with or without a **remote control**

Note 101 to entry: See Figure 101 and Figure 102.

**3.109**  
**wheel guard**

device which partly encloses the **diamond wheel** and gives protection to the operator

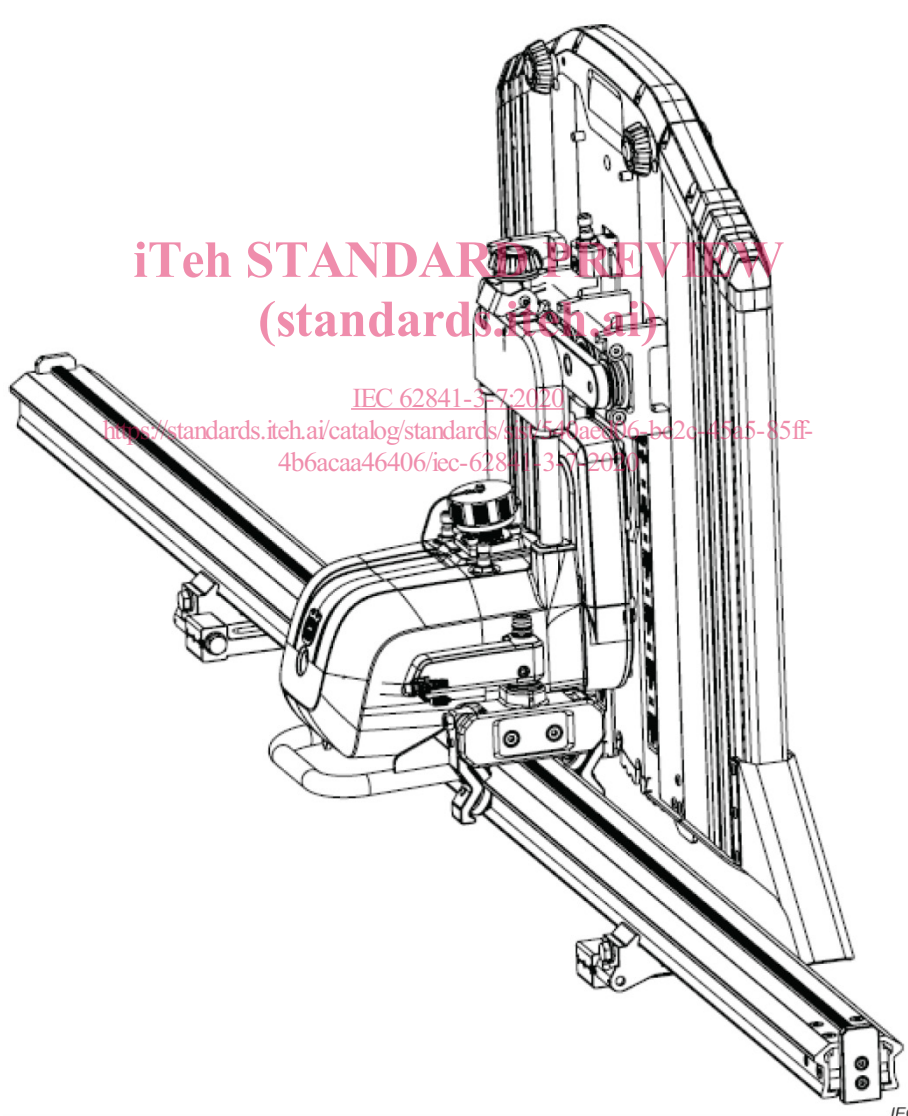
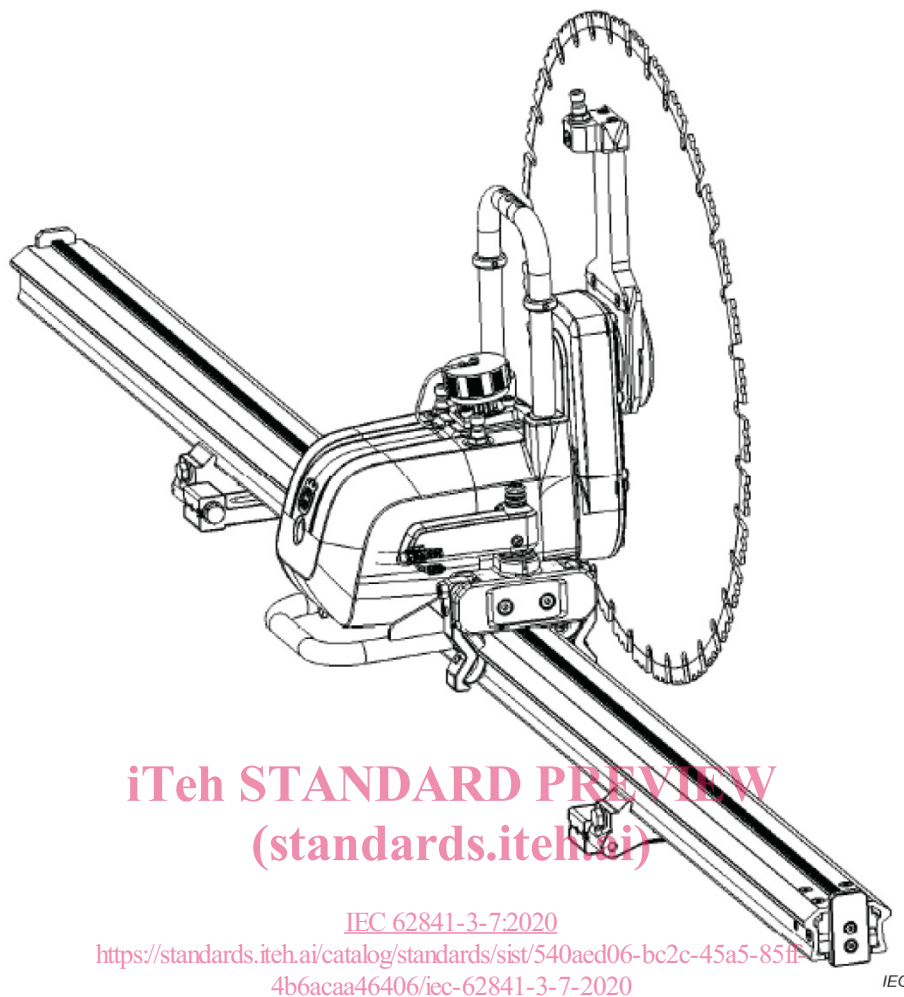


Figure 101 – Wall saw



**Figure 102 – Wall saw with wheel guard removed**

#### **4 General requirements**

This clause of Part 1 is applicable.

#### **5 General conditions for the tests**

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

##### **5.17 Addition:**

*The mass of the tool does not include the **track guiding system**, but does include the **wheel guard** and the auxiliary handle, if provided.*

#### **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:

- recommended speed for each **diamond wheel** diameter specified in 8.14.2 a) 101);
- **rated capacity**.

### 8.2 Addition:

**Wall saws** shall also be marked with:

- "▲ **WARNING** Always wear eye protection" or the symbol ISO 7010-M004-2019-07 or the safety sign in Figure 103:



**Figure 103 – Safety sign illustrating – "WARNING – Always wear eye protection"**

The safety sign in Figure 103 may be modified by adding other personal protective equipment, such as ear protection or a dust mask.

### 8.3 Replacement of the sixth dash: [IEC 62841-3-7:2020](https://standards.iteh.ai/catalog/standards/sist/540aed06-bc2c-45a5-85ff-9c09e4116c0a/iec-62841-3-7-2020)

- ">25 kg" on each separable enclosure with a mass above 25 kg.

NOTE 101 Examples of separable enclosures include the **saw unit**, **diamond wheel**, **wheel guard** and power converting or control unit(s), if any.

### Addition:

The direction of rotation of the spindle shall be indicated on the tool by an arrow, raised or recessed or by any other means no less visible and indelible.

#### 8.14.1 Addition:

The additional safety instructions as specified in 8.14.1.101 shall be given. This information may be printed separately from the "General Power Tool Safety Warnings".

##### 8.14.1.101 Safety instructions for wall saws

- a) **Operate the power tool by insulated grasping surfaces when performing an operation where the cutting accessory can contact hidden wiring or its own cord. A cutting accessory contacting a "live" wire can make exposed metal parts of the power tool "live" and could give the operator an electric shock.**
- b) **Wear ear protectors when diamond sawing.** *Exposure to noise can cause hearing loss.*
- c) **If the diamond wheel becomes jammed, stop applying feed force and turn off the tool. Investigate and take corrective actions to eliminate the cause of the diamond wheel jamming. Continued operation with a jammed diamond wheel could cause loss of control or damage to the wall saw.**
- d) **When sawing through the workpiece, ensure to protect persons and the work area on the other side.** *The diamond wheel may protrude through the workpiece.*

- e) **Ensure that the method of securing the track guiding system to the workpiece is capable of holding and restraining the machine during use.** *If the workpiece is weak or porous, the anchor(s) can pull out, causing the track guiding system to release from the workpiece.*

**8.14.2 a) Addition:**

- 101) Information about which **diamond wheels** (type, arbor size, diameter and thickness) can be used with the tool, including the recommended tool speed for each **diamond wheel** diameter;
- 102) Information on the types of material that may be cut;
- 103) Instructions on how to mount the **track guiding system** to the workpiece;
- 104) Instructions on how to assemble the guarding system, dust extraction system or **liquid system**, and the **saw unit** to the **track guiding system**;

**8.14.2 b) Addition:**

- 101) Instructions on how to use **wheel guards**, such as removing portions of the **wheel guard** for special cutting operations (e.g. flush cutting);
- 102) Instructions on how to connect a **remote control**;
- 103) Information about the specific **flanges** to be used with all **diamond wheels** in accordance with 8.14.2 a) 101). Instruction on the mounting of **diamond wheels** and the use of the correct **flanges**;
- 104) Instructions on how to perform an initial guide cut.

**8.14.2 c) Addition:**

- 101) Instruction on storage and handling of **diamond wheels**.

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**Replacement of the NOTE:**

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NOTE In Europe (EN 62841-3-7), the following additional requirements apply:

Emissions

- 1) The noise emission, measured in accordance with I.2, as follows:
  - A-weighted sound pressure level  $L_{pA}$  and its uncertainty  $K_{pA}$ , where  $L_{pA}$  exceeds 70 dB(A). Where  $L_{pA}$  does not exceed 70 dB(A), this fact shall be indicated;
  - A-weighted sound power level  $L_{WA}$  and its uncertainty  $K_{WA}$ , where the A-weighted sound pressure level  $L_{pA}$  exceeds 80 dB(A);
  - peak C-weighted instantaneous sound pressure value  $L_{pCpeak}$ , where this exceeds 63 Pa (130 dB in relation to 20  $\mu$ Pa).
- 2) Recommendation for the operator to wear hearing protection.
- 3) The following information:
  - that the declared noise emission value(s) have been measured in accordance with a standard test method and may be used for comparing one tool with another;
  - that the declared noise emission value(s) may also be used in a preliminary assessment of exposure.
- 4) A warning:
  - that the noise emissions during actual use of the power tool can differ by up to 10 dB compared to the declared values, depending on the **diamond wheel** and working conditions, which should be taken into account when selecting hearing protection; and
  - of the need to identify safety measures to protect the operator that are based on an estimation of exposure in the actual conditions of use (taking account of all parts of the operating cycle such as the times when the tool is switched off and when it is running idle in addition to the trigger time).

### 8.14.3 Replacement:

If information about the mass or weight of the tool is provided, it shall either be the mass specified in 5.17, or it shall be clear which part of the tool the mass refers to.

*Compliance is checked by inspection.*

## 9 Protection against access to live parts

This clause of Part 1 is applicable.

## 10 Starting

This clause of Part 1 is applicable.

## 11 Input and current

This clause of Part 1 is applicable.

## 12 Heating

This clause of Part 1 is applicable.

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## 13 Resistance to heat and fire

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This clause of Part 1 is applicable.

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## 14 Moisture resistance

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

### 14.2.1 Replacement:

*The tool is not connected to the supply.*

*Tools are turned continuously at approximately 1 r/min through the most unfavourable positions during the test.*

*The test is performed with any **remote control** connected in accordance with 8.14.2 b) 102).*

*Electrical components, covers and other parts, except for cover(s) or cap(s) as specified below, that can be removed without the aid of a tool are removed and subjected, if necessary, to the relevant treatment with the main part.*

*If cover(s) or cap(s) are used that*

- *are detachable without the aid of a tool; and*
- *provide protection for a connection to a **remote control**;*

*the test is repeated with the cover(s) or cap(s) installed as intended to cover the connection(s), provided that the cap(s) or cover(s) remain attached to the **wall saw** when they are removed.*

### 14.3 Replacement:

**Liquid systems** or spillage of liquid shall not subject the user to an increased risk of electrical shock.

If the tool is rated at least IPX4 in accordance with 14.2, this requirement is deemed to be fulfilled.

*Compliance is checked by the following test:*

*The **residual current device**, if any, shall be disabled during the test. Electrical components, covers and other parts which can be removed without the aid of a tool are removed, except those fulfilling the test of 21.22.*

*The tool is prepared with approximately 1,0 % NaCl solution in the following modes if applicable:*

- *as described in 8.14.2;*
- *the liquid container of the tool is completely filled, and a further quantity, equal to 15 % of the capacity of the container, or 0,25 l, whichever is the greater, is poured in steadily over a period of  $60^{+0}_{-10}$  s, while the tool is resting in its filling position in accordance with 8.14.2 d);*
- *a detachable liquid container is filled completely and mounted and dismantled 10 times on the tool.*

*In each applicable preparation, the tool is operated at **rated voltage** in each position consistent with the instructions in accordance with 8.14.2 b) for 1 min while monitoring the leakage current as in Clause C.3.*

*For 3-phase **wall saws** with a **rated input** exceeding 3 700 W, during the test the leakage current shall not exceed:*

- *5 mA for a, b and c in Figure C.2 in the closed position;*
- *10 mA for the test repeated with each of the switches a, b, c in Figure C.2 open in turn, the other two switches being closed.*

*For all other **wall saws**, during the test the leakage current shall not exceed:*

- *2 mA for a **class II tool**;*
- *5 mA for a **class I tool**.*

*Following this test, the tool shall meet the electric strength test of D.2 between **live parts** and **accessible parts** after being allowed to dry for 24 h at ambient temperature.*

### 14.4 Replacement:

**Liquid systems** shall not subject the user to an increased risk of electrical shock by components not capable of withstanding the pressure during operation.

*Compliance is checked by the following test.*

*The **residual current device**, if any, shall be disabled during the test.*

*The **liquid system** is closed and an approximately 1,0 % NaCl solution at a hydrostatic pressure equal to twice the pressure stated in 8.14.2 d) 1) is applied for 1 h.*

*The tool is then placed for 1 min, in all positions consistent with the instructions in accordance with 8.14.2 b) while monitoring the leakage current as in Clause C.2.*