

# INTERNATIONAL STANDARD

**Electric motor-operated hand-held tools, transportable tools and lawn and garden machinery – Safety –  
Part 2-4: Particular requirements for hand-held sanders and polishers other than disc type**

Document Preview

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## CONTENTS

FOREWORD.....	4
1 Scope.....	6
2 Normative references .....	6
3 Terms and definitions .....	6
4 General requirements .....	7
5 General conditions for the tests .....	7
6 Radiation, toxicity and similar hazards.....	7
7 Classification.....	7
8 Marking and instructions.....	7
9 Protection against access to live parts.....	8
10 Starting .....	8
11 Input and current .....	8
12 Heating.....	8
13 Resistance to heat and fire.....	8
14 Moisture resistance .....	8
15 Resistance to rusting.....	8
16 Overload protection of transformers and associated circuits .....	8
17 Endurance.....	8
18 Abnormal operation.....	9
19 Mechanical hazards.....	9
20 Mechanical strength .....	10
21 Construction .....	10
22 Internal wiring.....	11
23 Components .....	11
24 Supply connection and external flexible cords .....	11
25 Terminals for external conductors.....	11
26 Provision for earthing .....	11
27 Screws and connections.....	11
28 Creepage distances, clearances and distances through insulation.....	12
Annexes .....	15
Annex I (informative) Measurement of noise and vibration emissions.....	15
Annex K (normative) Battery tools and battery packs .....	18
Bibliography.....	19
Figure 101 – Rod test for the in-feed nip between the belt and roller.....	13
Figure 102 – Steel ball test for the in-feed nip between the belt housing enclosure and roller.....	14
Figure I.101 – Position of transducers for sanders and polishers .....	17

Table 4 – Required performance levels .....	9
Table I.101 – Operating conditions for sanders .....	15
Table I.102 – Operating conditions for polishers .....	16

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

**ELECTRIC MOTOR-OPERATED HAND-HELD TOOLS,  
TRANSPORTABLE TOOLS AND LAWN AND GARDEN MACHINERY –  
SAFETY –****Part 2-4: Particular requirements for hand-held  
sanders and polishers other than disc type**

## FOREWORD

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**This consolidated version of the official IEC Standard and its amendment has been prepared for user convenience.**

**IEC 62841-2-4 edition 1.1 contains the first edition (2014-06) [documents 116/164/FDIS and 116/178/RVD], its corrigendum (2025-10) and its amendment 1 (2025-02) [documents 116/864/FDIS and 116/880/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 62841-2-4 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 2-4 is to be used in conjunction with the first edition of IEC 62841-1 (2014).

This Part 2-4 supplements or modifies the corresponding clauses in IEC 62841-1, so as to convert it into the IEC Standard: Particular requirements for hand-held sanders and polishers other than disc type.

Where a particular subclause of Part 1 is not mentioned in this Part 2-4, 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.

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The committee has decided that the contents of this document and its amendment will remain unchanged until the stability date indicated on the IEC website under [webstore.iec.ch](http://webstore.iec.ch) in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn, or
- revised.

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.





### 3.105

#### **orbital sander or polisher**

**sander** or **polisher** equipped with a plate, which performs an orbital oscillating motion parallel to the work surface

Note 1 to entry: Orbital sanders or polishers are also known as oscillating sanders or polishers

### 3.106

#### **random orbit sander or polisher**

**sander** or **polisher** equipped with a plate positioned eccentrically on the driving spindle which can rotate freely around its axis parallel to the work surface

### 3.107

#### **reciprocating sander or polisher**

**sander** or **polisher** equipped with a plate which performs a reciprocating motion parallel to the work surface

## 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 includes the dust extraction adapter, if any.*

## 6 Radiation, toxicity and similar hazards -4:2014

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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:

### 8.3 Addition:

For **belt sanders** and **drum sanders** and **polishers**, the direction of rotation shall be indicated on the tool by an arrow, raised or sunk, or by any other means no less visible and indelible.

### 8.14.1 Addition:

For **belt sanders and drum sanders**, the additional safety instructions as specified in 8.14.1.101 shall be given. This part may be printed separately from the “General Power Tool Safety Warnings”.

#### 8.14.1.101 Belt sander and drum sander safety warnings

Hold the power tool by insulated gripping surfaces, because the sanding surface may contact its own cord. Cutting a "live" wire may make exposed metal parts of the power tool "live" and could give the operator an electric shock.

### 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.

### 13 Resistance to heat and fire

This clause of Part 1 is applicable.

### 14 Moisture resistance

This clause of Part 1 is applicable. <https://standards.iteh.ai/iec/70aaf80f-f3b5-4b36-a331-656d67663ee0/iec-62841-2-4-2014>

### 15 Resistance to rusting

This clause of Part 1 is applicable.

### 16 Overload protection of transformers and associated circuits

This clause of Part 1 is applicable.

### 17 Endurance

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

**17.2** Replacement of the third paragraph, except for **belt sanders** and **drum sanders** and **polishers**:

**Orbital sanders** and **polishers**, **random orbit sanders** and **polishers**, and **reciprocating sanders** and **polishers** are operated for 24 h at a voltage equal to 1,1 times the highest rated voltage or 1,1 times the upper limit of the rated voltage range, and then for 24 h at a supply voltage equal to 0,9 times the lowest rated voltage or 0,9 times the lower limit of the rated voltage range. The 24 h of operation need not be continuous. If applicable, the tool is adjusted to the maximum attainable speed.

The tools are operated while the platen, fitted with abrasive paper in reverse position or a polishing bonnet as applicable, is resting under the weight of the tool on a steel plate. The abrasive paper should be replaced as required to avoid direct contact between platen and steel plate. These tools are only tested in the upright position where the platen is horizontal.

## 18 Abnormal operation

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

### 18.8 **Table 4** Replacement of Table 4:

**Table 4 – Required performance levels**

Type and purpose of SCF	Minimum performance level (PL)
<b>Power switch</b> – prevent unwanted switch-on for <b>belt sanders, drum sanders and drum polishers</b>	b
<del><b>Power switch</b> – prevent unwanted switch-on for <b>random orbit sanders and polishers</b></del>	<del>a</del>
<b>Power switch</b> – prevent unwanted switch-on for <del>other sanders and polishers other than <b>belt sanders, drum sanders, drum polishers</b></del>	Not an SCF
<b>Power switch</b> – provide desired switch-off for <b>belt sanders, drum sanders and polishers and random orbit sanders</b> and <b>drum polishers</b>	b
<b>Power switch</b> – provide desired switch-off for <del>other sanders and polishers other than <b>belt sanders, drum sanders and drum polishers</b></del>	Not an SCF
Provide desired direction of rotation for <b>belt sanders, drum sanders and drum polishers</b>	a
Any speed limiting device	Not an SCF
Prevent exceeding thermal limits as in <del>Clause</del> 18.4 and 18.5.3	a

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## 19 Mechanical hazards

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

### 19.1 Replacement of the first paragraph:

Moving and dangerous parts other than the abrasive belt and belt rollers of **belt sanders** shall, as far as is compatible with the use and working of the tool, be so positioned or enclosed to provide adequate protection against personal injury. The requirements for the abrasive belt and belt rollers of **belt sanders** are specified in 19.1.101, 19.1.102 and 19.1.103.

**19.1.101 Belt sanders** shall be designed to minimise the risk due to the nip hazard from the roller closest to the operator without limiting the intended functionality of the tool.

Compliance is checked by the following tests 1 and 2.

- 1) An test rod with 8 mm diameter, applied parallel to the axis of the roller, shall not be able to enter the in-feed nip between the roller and the abrasive belt. As the rod is attempted to be inserted into this area, the abrasive belt shall not be displaced in any way that would allow the entry of the rod. See Figure 101.
- 2) The abrasive belt is removed. A steel ball with 7 mm diameter is placed all along the in-feed gap between the intended belt contact surface of the roller and the belt housing enclosure with the tool turned upside down in the most unfavourable position, see

*Figure 102. The steel ball shall not move under its own weight into the gap between the roller and the belt housing beyond the line of complete passage as shown in Figure 102.*

**19.1.102 Belt sanders** shall be designed to limit access to in-feed nip locations from roller(s) other than those closest to the operator without limiting the intended functionality of the tool.

In-feed nip locations are regarded to be located either

between the intended belt contact surface of the roller and the belt housing enclosure

or

between the intended belt contact surface of the roller and the abrasive belt.

Access shall be limited by either a) or b) as follows:

- a) The chain distance between any in-feed nip location and the closest point on a handle or grasping surface identified in accordance with 8.14.2 b) 6) shall be at least 100 mm.

*Compliance is checked by measurement.*

- ab) If a stick-type auxiliary handle is mounted to the side with its axis perpendicular to the direction of movement of the abrasive belt, it shall be provided with a flange having a height not less than 12 mm above the grasping surface between the grasping area and the in-feed nip location.

*Compliance is checked by inspection and by measurement.*

**19.1.103** The ends of rollers that extend past the edge of the intended belt contact surface shall be smooth and free of sharp edges.

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*Compliance is checked by inspection.*

**19.6** This subclause is not applicable.

## 20 Mechanical strength

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

**20.5** This subclause is not applicable for **sanders** and **polishers** except for **belt sanders** and **drum sanders**.

## 21 Construction

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

**21.18.1** *Addition:*

~~For sanders other than belt sanders and drum sanders, power switches other than momentary power switches are permitted.~~