

# INTERNATIONAL STANDARD

# NORME INTERNATIONALE

**Electric motor-operated hand-held tools, transportable tools and lawn and garden machinery – Safety –  
Part 2-14: Particular requirements for hand-held planers**

**Outils électroportatifs à moteur, outils portables et machines pour jardins et pelouses – Sécurité –  
Partie 2-14: Exigences particulières pour les rabots portatifs**



**THIS PUBLICATION IS COPYRIGHT PROTECTED**  
**Copyright © 2015 IEC, Geneva, Switzerland**

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either IEC or IEC's member National Committee in the country of the requester. If you have any questions about IEC copyright or have an enquiry about obtaining additional rights to this publication, please contact the address below or your local IEC member National Committee for further information.

Droits de reproduction réservés. Sauf indication contraire, aucune partie de cette publication ne peut être reproduite ni utilisée sous quelque forme que ce soit et par aucun procédé, électronique ou mécanique, y compris la photocopie et les microfilms, sans l'accord écrit de l'IEC ou du Comité national de l'IEC du pays du demandeur. Si vous avez des questions sur le copyright de l'IEC ou si vous désirez obtenir des droits supplémentaires sur cette publication, utilisez les coordonnées ci-après ou contactez le Comité national de l'IEC de votre pays de résidence.

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

Tel.: +41 22 919 02 11  
Fax: +41 22 919 03 00  
[info@iec.ch](mailto:info@iec.ch)  
[www.iec.ch](http://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 corrigenda or an amendment might have been published.

#### IEC Catalogue - [webstore.iec.ch/catalogue](http://webstore.iec.ch/catalogue)

The stand-alone application for consulting the entire bibliographical information on IEC International Standards, Technical Specifications, Technical Reports and other documents. Available for PC, Mac OS, Android Tablets and iPad.

#### IEC publications search - [www.iec.ch/searchpub](http://www.iec.ch/searchpub)

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](http://webstore.iec.ch/justpublished)

Stay up to date on all new IEC publications. Just Published details all new publications released. Available online and also once a month by email.

#### Electropedia - [www.electropedia.org](http://www.electropedia.org)

The world's leading online dictionary of electronic and electrical terms, containing 20 000 terms and definitions 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](http://std.iec.ch/glossary)

65 000 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 Customer Service Centre - [webstore.iec.ch/csc](http://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: [csc@iec.ch](mailto:csc@iec.ch).

---

#### A propos de l'IEC

La Commission Electrotechnique Internationale (IEC) est la première organisation mondiale qui élabore et publie des Normes internationales pour tout ce qui a trait à l'électricité, à l'électronique et aux technologies apparentées.

#### A propos des publications IEC

Le contenu technique des publications IEC est constamment revu. Veuillez vous assurer que vous possédez l'édition la plus récente, un corrigendum ou amendement peut avoir été publié.

#### Catalogue IEC - [webstore.iec.ch/catalogue](http://webstore.iec.ch/catalogue)

Application autonome pour consulter tous les renseignements bibliographiques sur les Normes internationales, Spécifications techniques, Rapports techniques et autres documents de l'IEC. Disponible pour PC, Mac OS, tablettes Android et iPad.

#### Recherche de publications IEC - [www.iec.ch/searchpub](http://www.iec.ch/searchpub)

La recherche avancée permet de trouver des publications IEC en utilisant différents critères (numéro de référence, texte, comité d'études,...). Elle donne aussi des informations sur les projets et les publications remplacées ou retirées.

#### IEC Just Published - [webstore.iec.ch/justpublished](http://webstore.iec.ch/justpublished)

Restez informé sur les nouvelles publications IEC. Just Published détaille les nouvelles publications parues. Disponible en ligne et aussi une fois par mois par email.

#### Electropedia - [www.electropedia.org](http://www.electropedia.org)

Le premier dictionnaire en ligne de termes électroniques et électriques. Il contient 20 000 termes et définitions en anglais et en français, ainsi que les termes équivalents dans 16 langues additionnelles. Egalement appelé Vocabulaire Electrotechnique International (IEV) en ligne.

#### Glossaire IEC - [std.iec.ch/glossary](http://std.iec.ch/glossary)

65 000 entrées terminologiques électrotechniques, en anglais et en français, extraites des articles Termes et Définitions des publications IEC parues depuis 2002. Plus certaines entrées antérieures extraites des publications des CE 37, 77, 86 et CISPR de l'IEC.

#### Service Clients - [webstore.iec.ch/csc](http://webstore.iec.ch/csc)

Si vous désirez nous donner des commentaires sur cette publication ou si vous avez des questions contactez-nous: [csc@iec.ch](mailto:csc@iec.ch).

# INTERNATIONAL STANDARD

# NORME INTERNATIONALE

---

**Electric motor-operated hand-held tools, transportable tools and lawn and garden machinery – Safety –**  
**Part 2-14: Particular requirements for hand-held planers**

**Outils électroportatifs à moteur, outils portables et machines pour jardins et pelouses – Sécurité –**  
**Partie 2-14: Exigences particulières pour les rabots portatifs**

INTERNATIONAL  
ELECTROTECHNICAL  
COMMISSION

COMMISSION  
ELECTROTECHNIQUE  
INTERNATIONALE

---

ICS 25.140.20

ISBN 978-2-8322-4939-0

**Warning! Make sure that you obtained this publication from an authorized distributor.**  
**Attention! Veuillez vous assurer que vous avez obtenu cette publication via un distributeur agréé.**

## CONTENTS

CONTENTS .....	2
FOREWORD .....	4
1 Scope .....	6
2 Normative references .....	6
3 Terms and definitions .....	6
4 General requirements .....	6
5 General conditions for the tests .....	6
6 Radiation, toxicity and similar hazards .....	7
7 Classification .....	7
8 Marking and instructions .....	7
9 Protection against access to live parts .....	7
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 .....	8
19 Mechanical hazards .....	9
20 Mechanical strength .....	11
21 Construction .....	11
22 Internal wiring .....	12
23 Components .....	12
24 Supply connection and external flexible cords .....	12
25 Terminals for external conductors .....	12
26 Provision for earthing .....	12
27 Screws and connections .....	12
28 Creepage distances, clearances and distances through insulation .....	12
<b>Annexes</b> .....	<b>15</b>
Annex I (informative) Measurement of noise and vibration emissions .....	15
Annex K (normative) Battery tools and battery packs .....	19
Annex L (normative) Battery tools and battery packs provided with mains connection or non-isolated sources .....	20
Bibliography .....	21

ITeH STANDARD PREVIEW  
(standards.iteh.ai)

IEC 62841-2-14:2015

standards.iteh.ai/catalog/standards/sist/f7a0b3fa-2c41-4ea1-a420-3568c162616a/iec-62841-2-14-2015

Figure 101 – Examples of cutting heads with basic dimensions.....	13
Figure 102 – Test probe.....	14
Figure I.101 – Test set-up for planers .....	17
Figure I.102 – Positions of transducers .....	18
Table 4 – Required performance levels .....	9
Table I.101 – Test conditions .....	15

**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**

[IEC 62841-2-14:2015](https://standards.iteh.ai/catalog/standards/sist/f7a0b3fa-2c41-4ea1-a420-3568c162616a/iec-62841-2-14-2015)

<https://standards.iteh.ai/catalog/standards/sist/f7a0b3fa-2c41-4ea1-a420-3568c162616a/iec-62841-2-14-2015>

## INTERNATIONAL ELECTROTECHNICAL COMMISSION

**ELECTRIC MOTOR-OPERATED HAND-HELD TOOLS, TRANSPORTABLE TOOLS AND LAWN AND GARDEN MACHINERY – SAFETY –****Part 2-14: Particular requirements for hand-held planers**

## 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.  
<https://standards.iteh.ai/catalog/standards/sist/f7a0b3fa-2c41-4ea1-a420-3568c162616a/iec-62841-2-14-2015>
- 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.

International Standard IEC 62841-2-14 has been prepared by IEC technical committee 116: Safety of motor-operated electric tools.

This bilingual version (2017-12) corresponds to the monolingual English version, published in 2015-06.

The text of this standard is based on the following documents:

FDIS	Report on voting
116/222/FDIS	116/236/RVD

Full information on the voting for the approval of this 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.

The French version of this standard has not been voted upon.

This Part 2-14 is to be used in conjunction with the first edition of IEC 62841-1 (2014).

This Part 2-14 supplements or modifies the corresponding clauses in IEC 62841-1, so as to convert it into the IEC standard: Particular requirements for hand-held planers.

Where a particular subclause of Part 1 is not mentioned in this Part 2-14, 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.

## iTeh STANDARD PREVIEW

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.

IEC 62841-2-14:2015

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC website 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.

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

## Part 2-14: Particular requirements for hand-held planers

### 1 Scope

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

*Addition:*

This part of IEC 62841 applies to **planers**.

### 2 Normative references

This clause of Part 1 is applicable.

### 3 Terms and definitions

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

*Additional definitions:*

#### 3.101 planer

tool intended for removing surface material, equipped with a rotating **cutting head** where the axis of rotation of the **cutting head** is parallel to the plane of the base plate, which is the part supporting the **planer** on the workpiece

Note 1 to entry: The base plate consists of a fixed shoe and an adjustable shoe that determines the depth of cut.

#### 3.102 lift-off device

device which keeps the blade(s) from making contact with a flat surface when the base plate of the **planer** is attempted to be placed on the flat surface

#### 3.103 cutting head

assembly of blades, cutter block, blade fixing elements, relevant screws and spindle, the whole being ready for working

### 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 **cutting head** including blades and the dust extraction adapter, if any.

## 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:

- **rated no-load speed.**

### 8.3 Addition:

- direction of rotation of the working spindle. This shall be indicated by an arrow, raised or sunk, or by other means no less visible and indelible.

### 8.14.1 Addition:

[IEC 62841-2-14:2015](https://standards.iteh.ai/catalog/standards/sist/f7a0b3fa-2c41-4ea1-a420-170181600000/iec-62841-2-14-2015)

[https://standards.iteh.ai/catalog/standards/sist/f7a0b3fa-2c41-4ea1-a420-](https://standards.iteh.ai/catalog/standards/sist/f7a0b3fa-2c41-4ea1-a420-170181600000/iec-62841-2-14-2015)

For **planers**, 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 Safety instructions for planers

- Wait for the cutter to stop before setting the tool down.** *An exposed rotating cutter may engage the surface leading to possible loss of control and serious injury.*
- Hold the power tool by insulated gripping surfaces, because the cutter 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.*
- Use clamps or another practical way to secure and support the workpiece to a stable platform.** *Holding the workpiece by your hand or against the body leaves it unstable and may lead to loss of control.*

#### 8.14.2 b) Addition:

- 101) instructions on how to adjust the entire range of the depth of cut;
- 102) instruction on the correct use of the dust collection system.

#### 8.14.2 c) Addition:

- 101) information about types of **cutting heads** which can be used, if applicable;
- 102) instructions for the changing of the blades and their adjustment to the correct position;
- 103) instruction on how to properly clean/clear the chip ejection opening.

## 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.

## 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:

**17.101** If a **lift-off device** is provided to meet the requirements of 18.8 or 21.18.1.1, it shall be sufficiently durable.

*Compliance is checked by a new tool sample completing the following test.*

*The **planer** is to be set in horizontal position. The **lift-off device** is cycled through its intended range of operation for 50 000 cycles. This sequence is repeated at a rate not less than 10 cycles per minute.*

*After completion of the cycling test as specified above, the **planer** shall then comply with 19.111.*

## 18 Abnormal operation

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

**18.8** *Replacement of Table 4 by the following:*

**Table 4 – Required performance levels**

Type and purpose of SCF	Minimum Performance Level (PL)
<b>Power switch</b> – prevent unwanted switch-on	c
<b>Power switch</b> – provide desired switch-off for <b>planers</b> with <b>lift-off device</b>	a
<b>Power switch</b> – provide desired switch-off for <b>planers</b> without <b>lift-off device</b>	b
Any electronic control to pass the test of 18.3	a
Overspeed prevention to prevent output speed above 130 % of <b>rated no-load speed</b>	b
Provide desired direction of rotation	a
Prevent exceeding thermal limits as in Clause 18	a
Prevent self-resetting as required in 23.3	b
Lock-off function as required by 21.18.1.2	b

## 19 Mechanical hazards

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

### 19.1 Addition:

For the requirements given in 19.107, 19.108 and 19.109, only the test probe shown in Figure 102 is used.

**19.4.101 Planers** with a mass according to 5.17 exceeding 3 kg shall have at least two handles. The auxiliary handle, if any, may also be used for the depth-of-cut setting, provided the adjustment of depth of cut is achieved by a rotary action.

*Compliance is checked by inspection and by measurement.*

**19.101** The **cutting head** shall be cylindrically shaped except for the blades, the gullet and the blade clamping means.

The maximum gullet width  $s$  shall be

$$s_{\max} = 0,235 d + 7,2 \text{ mm}$$

where  $d$  is the diameter of the rotating circle of the cutting edges. See Figure 101.

*Compliance is checked by inspection and by measurement.*

**19.102** The blades when aligned with the fixed shoe shall not project by more than 1,1 mm radially beyond the cutter block (as per dimension “a” in Figure 101).

*Compliance is checked by measurement.*

**19.103** At any depth of cut, the distance “b” (see Figure 101) between the rotating circle of the cutting edges and the trailing edge on the adjustable shoe shall not exceed 5 mm measured radially.

*Compliance is checked by inspection and by measurement.*

**19.104** The blades shall be secured in the cutter block in such a way that friction alone is not relied upon to prevent the radial ejection of the blades.

*Compliance is checked by inspection.*

**19.105 Cutting heads** shall be designed and made of such materials that they withstand the forces and loads expected in **normal use**.

*Compliance is checked by the following test:*

*An overspeed test shall be made on a sample **cutting head**, equipped with blades for the largest cutting diameter and the largest cutting edge width, the test speed being 1,5 times the **rated no-load speed**. If applicable, tension elements such as clamping screws shall be tightened in accordance with the instructions required by 8.14.2 b).*

*After the test, the **cutting head** shall not be deformed or cracked, no screws shall be loosened and displacements of separable parts shall be less than specified in the test procedure.*

*The test procedure is as follows:*

- 1) Measure the **cutting head** dimensions.
- 2) Bring the **cutting head** to the **rated no-load speed**, for 1 min.
- 3) Stop and re-measure the **cutting head**; measured displacements of the separable parts of the **cutting head** shall not be greater than 0,15 mm.
- 4) Bring the **cutting head** to the test speed, for 1 min.
- 5) Stop and re-measure the **cutting head** and compare the results with those obtained from step 3. The compared displacements shall not exceed 0,15 mm.

**19.106** Clamping screws or bolts shall not project beyond the cutter block as shown in Figure 101.

*Compliance is checked by inspection.*

**19.107** It shall not be possible to inadvertently touch rotating parts from the sides of the **planer**, except for the cases covered by 19.108.

*Compliance is checked by the following test:*

*The **planer** is set to minimum depth of cut and is positioned with the shoes resting on a flat surface that extends beyond the **planer** by at least 100 mm in all directions. Any **lift-off device** is disabled. The accessibility is checked by means of the test probe shown in Figure 102 with a force not exceeding 5 N.*

**19.108 Planers** with rabbeting facilities shall be provided with a **guard** that avoids inadvertent contact at the sides with the blades.

NOTE Rabbeting is also known as rebating.

*Compliance is checked by inspection and by the following test:*

*The **planer** is set to minimum depth of cut and is positioned with the shoes resting on a flat surface that extends beyond the **planer** by at least 100 mm in all directions. Any **lift-off device** is disabled. The accessibility is checked by means of the test probe shown in Figure 102 without any force.*

**19.109** It shall not be possible to touch the blades through the chip ejection opening.

*Compliance is checked by testing all apertures for chip ejection with the test probe of Figure 102. It shall not be possible to touch the blades in the **cutting head** at any angle of the probe.*

**19.110 Planers** shall stop within 10 s after switching off.

*Compliance is checked by inspection and by measurement.*

#### **19.111 Lift-off device**

**19.111.1** If a **lift-off device** is provided to meet the requirements of 18.8 or 21.18.1.1, it shall meet the requirements of 19.111.2 and 19.111.3, which are checked only after completing the endurance test of 17.101.

**19.111.2** If a **lift-off device** is provided, it shall be designed so that

- it is automatically activated, when the **planer** is lifted up from a horizontal surface; and
- the blade(s) do not make contact, when the **planer** is set at maximum depth of cut in accordance with 8.14.2 b) 101) and placed on a horizontal surface.

*Compliance is checked by inspection.*

**19.111.3** A **lift-off device** shall provide sufficient stability.

*Compliance is checked by the following test:*

*The **planer** is set to maximum depth of cut in accordance with 8.14.2 b) 101) and with the **supply cord**, if any, removed. The **planer** is then placed on a flat board of medium density fibreboard (MDF) having a density of 650 kg/m<sup>3</sup> to 850 kg/m<sup>3</sup> that is inclined at an angle of 10°, such that the rear of the **planer** is nearest to the high side of the board and allowed to rest freely for 10 s to 12 s. During the test, the **planer** is permitted to slide, however, the **lift-off device** shall not collapse such that the **planer** blades come into contact with the board.*

## **20 Mechanical strength**

This clause of Part 1 is applicable.

## **21 Construction**

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

#### **21.18.1.1 Addition:**

**Planers** whose blade(s) make contact with a flat surface when the base plate is placed on the flat surface and without a **lift-off device** are regarded as tools having a risk associated with continued locked-on operation.

NOTE In Europe (EN 62841-2-14), the above text is replaced by the following:

For **planers**, the switch shall not have any locking device to lock it in the “on” position.

#### **21.18.1.2 Addition:**

**Planers** are regarded as tools having a risk associated with inadvertent starting.