

INTERNATIONAL STANDARD

NORME INTERNATIONALE

**Hand-held motor-operated electric tools – Safety –
Part 2-4: Particular requirements for sanders and polishers other than disk type**

**Outils électroportatifs à moteur – Sécurité –
Partie 2-4: Règles particulières pour les ponceuses et les lustreuses autres que
du type à disque**

[IEC 60745-2-4:2002](https://standards.iteh.ai/catalog/standards/iec/b70d31ae-301b-4d6f-ab95-87f5d1910f42/iec-60745-2-4-2002)

<https://standards.iteh.ai/catalog/standards/iec/b70d31ae-301b-4d6f-ab95-87f5d1910f42/iec-60745-2-4-2002>



THIS PUBLICATION IS COPYRIGHT PROTECTED

Copyright © 2008 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
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

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

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

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

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 15 additional languages. Also known as the International Electrotechnical Vocabulary (IEV) online.

IEC Glossary - 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

If you wish to give us your feedback on this publication or need further assistance, please contact the Customer Service Centre: 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

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

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

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

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 15 langues additionnelles. Egalement appelé Vocabulaire Electrotechnique International (IEV) en ligne.

Glossaire IEC - 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

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



IEC 60745-2-4

Edition 2.1 2008-08
CONSOLIDATED VERSION

INTERNATIONAL STANDARD

NORME INTERNATIONALE

**Hand-held motor-operated electric tools – Safety –
Part 2-4: Particular requirements for sanders and polishers other than disk type**

**Outils électroportatifs à moteur – Sécurité –
Partie 2-4: Règles particulières pour les ponceuses et les lustreuses autres que
du type à disque**

[IEC 60745-2-4:2002](https://standards.iteh.ai/catalog/standards/iec/b70d31ae-301b-4d6f-ab95-87f5d1910f42/iec-60745-2-4-2002)

<https://standards.iteh.ai/catalog/standards/iec/b70d31ae-301b-4d6f-ab95-87f5d1910f42/iec-60745-2-4-2002>

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

COMMISSION
ELECTROTECHNIQUE
INTERNATIONALE

ICS 25.140.20; 25.140.30; 25.080.50

ISBN 2-8318-9009-5

**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.**

INTERNATIONAL ELECTROTECHNICAL COMMISSION

**HAND-HELD MOTOR-OPERATED ELECTRIC TOOLS –
SAFETY –****Part 2-4: Particular requirements for sanders and polishers
other than disk type**

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.
- 5) IEC provides no marking procedure to indicate its approval and cannot be rendered responsible for any equipment declared to be in conformity with an IEC Publication.
- 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.

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

IEC 60745-2-4 edition 2.1 contains the second edition (2002) [documents 61F/462/FDIS and 61F/486/RVD] and its amendment 1 (2008) [documents 61F/733/FDIS and 61F/753/RVD].

A vertical line in the margin shows where the base publication has been modified by amendment 1.

International Standard IEC 60745-2-4 has been prepared by subcommittee 61F: Safety of hand-held motor-operated electric tools, of IEC technical committee 61: Safety of household and similar electrical appliances

Main changes include Clause 3: Definitions, introducing detailed definitions for the tools in the scope of this part 2, and Clause 17: Endurance, with clearer specifications. Subclause 20.101 has been removed, as requirements for tools with water supply are now covered by Part 1.

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

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 third edition of IEC 60745-1: Safety of hand-held motor-operated electric tools – Part 1: General requirements. When this standard states “addition”, “modification” or “replacement”, the relevant text in Part 1 is to be adapted accordingly.

With amendment 1, this Part 2 is established on the basis of the fourth edition (2006) of IEC 60745-1, *Hand-held motor-operated electric tools – Safety – Part 1: General requirements*.

Main changes include editorial modifications to match with the fourth edition of IEC 60745-1, addition of a new safety warning to Clause 8: Marking and instructions, and clarifications in Annex K.

NOTE In this standard, the following print types are used:

- requirements: in roman type;
- *test specifications: in italic type;*
- notes: in smaller roman type.

Subclauses, tables and figures which are additional to those in Part 1 are numbered starting from 101; additional annexes are lettered AA, BB, etc.

IEC 60745 consists of the following parts, under the general title *Hand-held motor-operated electric tools – Safety*:

- Part 1: General requirements
- Part 2-1: Particular requirements for drills and impact drills
- Part 2-2: Particular requirements for screwdrivers and impact wrenches
- Part 2-3: Particular requirements for grinders, polishers and disk-type sanders
- Part 2-4: Particular requirements for sanders and polishers other than disk type
- Part 2-5: Particular requirements for circular saws and circular knives
- Part 2-6: Particular requirements for hammers
- Part 2-7: Particular requirements for spray guns for non-flammable liquids
- Part 2-8: Particular requirements for shears and nibblers
- Part 2-9: Particular requirements for tappers
- Part 2-11: Particular requirements for reciprocating saws (jig and sabre saws)
- Part 2-12: Particular requirements for concrete vibrators
- Part 2-13: Particular requirements for chain saws
- Part 2-14: Particular requirements for planers
- Part 2-15: Particular requirements for hedge trimmers
- Part 2-16: Particular requirements for tackers
- Part 2-17: Particular requirements for routers and trimmers
- Part 2-18: Particular requirements for strapping tools
- Part 2-19: Particular requirements for jointers
- Part 2-20: Particular requirements for band saws
- Part 2-21: Particular requirements for drain cleaners

The committee has decided that the contents of the base publication and its amendments will remain unchanged until the maintenance result 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.

iTeh Standards
(<https://standards.itih.ai>)
Document Preview

[IEC 60745-2-4:2002](#)

<https://standards.itih.ai/catalog/standards/iec/b70d31ae-301b-4d6f-ab95-87f5d1910f42/iec-60745-2-4-2002>

HAND-HELD MOTOR-OPERATED ELECTRIC TOOLS – SAFETY –

Part 2-4: Particular requirements for sanders and polishers other than disk type

1 Scope

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

Addition:

This standard applies to sanders and polishers with the exception of all types of disc-type tools, which are covered by IEC 60745-2-3.

Tools covered by this standard include but are not limited to belt sanders, reciprocating sanders or polishers, orbital sanders or polishers, and random orbit sanders or polishers.

2 Normative references

This clause of Part 1 is applicable.

3 Terms and definitions

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

[IEC 60745-2-4:2002](https://standards.iteh.ai/standards/iec/60745-2-4:2002)

<https://standards.iteh.ai/standards/iec/b70d31ae-301b-4d6f-ab95-87f5d1910f42/iec-60745-2-4-2002>

3.101

sander

tool intended to remove surface material using an abrasive medium

3.102

polisher

tool equipped with a disk or pad intended for polishing

3.103

belt sander

sander equipped with an endless abrasive belt

3.104

orbital sander or polisher (oscillating sander or polisher)

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

3.105

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

3.106

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.

6 Void

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

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

[IEC 60745-2-4:2002](https://standards.iteh.ai/standards/iec/60745-2-4:2002)

<https://standards.iteh.ai/standards/iec/b70d31ae-301b-4d6f-ab95-87f5d1910f42/iec-60745-2-4-2002>

- **Hold power tool by insulated gripping surfaces, because the belt 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.**

NOTE The above safety warning applies only to belt sanders and may be omitted for other types of sanders.

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 Leakage current

This clause of Part 1 is applicable.

14 Moisture resistance

This clause of Part 1 is applicable.

15 Electric strength

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 fifth paragraph, except for belt sanders:*

Orbital sanders and polishers, random orbit sanders and polishers, and reciprocating sanders and polishers 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 sander or polisher 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.

[IEC 60745-2-4:2002](https://standards.iteh.ai/catalog/standards/iec/b70d31ae-301b-4d6f-ab95-87f5d1910f42/iec-60745-2-4-2002)

<https://standards.iteh.ai/catalog/standards/iec/b70d31ae-301b-4d6f-ab95-87f5d1910f42/iec-60745-2-4-2002>

18 Abnormal operation

This clause of Part 1 is applicable.

19 Mechanical hazards

This clause of Part 1 is applicable.

20 Mechanical strength

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

20.5 *Replacement of the first paragraph:*

Belt sanders are likely to cut their own cord; therefore, handles and grasping surfaces, as specified in the instruction manual in accordance with 8.12.2 b), shall have adequate mechanical strength in order to provide insulation between the grasping area and the output shaft.

21 Construction

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

21.32 Replacement of the first paragraph:

Belt sanders are likely to cut their own cord; therefore, handles and grasping surfaces, as specified in the instruction manual in accordance with 8.12.2 b), shall be formed of insulating material or, when of metal, shall be either adequately covered by insulating material or their accessible parts shall be separated by insulating barrier(s) from accessible metal parts that may become live by the output shaft. These insulating barriers are not to be regarded as basic, supplementary, or reinforced insulation.

22 Internal wiring

This clause of Part 1 is applicable.

23 Components

This clause of Part 1 is applicable.

24 Supply connection and external flexible cords

This clause of Part 1 is applicable.

25 Terminals for external conductors

This clause of Part 1 is applicable. [IEC 60745-2-4:2002](https://standards.iteh.ai/catalog/standards/iec/b70d31ae-301b-4d6f-ab95-87f5d1910f42/iec-60745-2-4-2002)

<https://standards.iteh.ai/catalog/standards/iec/b70d31ae-301b-4d6f-ab95-87f5d1910f42/iec-60745-2-4-2002>

26 Provision for earthing

This clause of Part 1 is applicable.

27 Screws and connections

This clause of Part 1 is applicable.

28 Creepage distances, clearances and distances through insulation

This clause of Part 1 is applicable.

29 Resistance to heat, fire and tracking

This clause of Part 1 is applicable.