

INTERNATIONAL STANDARD

NORME INTERNATIONALE

**Household and similar electrical appliances – Safety –
Part 2-43: Particular requirements for clothes dryers and towel rails**

<https://standards.iteh.ai>

**Appareils électrodomestiques et analogues – Sécurité –
Partie 2-43: Exigences particulières pour les appareils de séchage du linge et les
sèche-serviettes**

[IEC 60335-2-43:2024](https://standards.iteh.ai/catalog/standards/iec/5300b77e-548e-4703-b221-ea54a49ae79a/iec-60335-2-43-2024)

<https://standards.iteh.ai/catalog/standards/iec/5300b77e-548e-4703-b221-ea54a49ae79a/iec-60335-2-43-2024>





THIS PUBLICATION IS COPYRIGHT PROTECTED
Copyright © 2024 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 Secretariat
3, rue de Varembe
CH-1211 Geneva 20
Switzerland

Tel.: +41 22 919 02 11
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 corrigendum or an amendment might have been published.

IEC publications search - webstore.iec.ch/advsearchform

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 once a month by email.

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: sales@iec.ch.

IEC Products & Services Portal - products.iec.ch

Discover our powerful search engine and read freely all the publications previews, graphical symbols and the glossary. With a subscription you will always have access to up to date content tailored to your needs.

Electropedia - www.electropedia.org

The world's leading online dictionary on electrotechnology, containing more than 22 500 terminological entries in English and French, with equivalent terms in 25 additional languages. Also known as the International Electrotechnical Vocabulary (IEV) online.

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.

Recherche de publications IEC -

webstore.iec.ch/advsearchform

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 une fois par mois par email.

Service Clients - webstore.iec.ch/csc

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

IEC Products & Services Portal - products.iec.ch

Découvrez notre puissant moteur de recherche et consultez gratuitement tous les aperçus des publications, symboles graphiques et le glossaire. Avec un abonnement, vous aurez toujours accès à un contenu à jour adapté à vos besoins.

Electropedia - www.electropedia.org

Le premier dictionnaire d'électrotechnologie en ligne au monde, avec plus de 22 500 articles terminologiques en anglais et en français, ainsi que les termes équivalents dans 25 langues additionnelles. Egalement appelé Vocabulaire Electrotechnique International (IEV) en ligne.



INTERNATIONAL STANDARD

NORME INTERNATIONALE

**Household and similar electrical appliances – Safety –
Part 2-43: Particular requirements for clothes dryers and towel rails**

**Appareils électrodomestiques et analogues – Sécurité –
Partie 2-43: Exigences particulières pour les appareils de séchage du linge et
les sèche-serviettes**

[IEC 60335-2-43:2024](https://standards.iteh.ai/catalog/standards/iec/5300b77e-548e-4703-b221-ea54a49ae79a/iec-60335-2-43-2024)

<https://standards.iteh.ai/catalog/standards/iec/5300b77e-548e-4703-b221-ea54a49ae79a/iec-60335-2-43-2024>

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

COMMISSION
ELECTROTECHNIQUE
INTERNATIONALE

ICS 13.120, 97.060

ISBN 978-2-8322-9799-5

**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.**

CONTENTS

FOREWORD.....	4
INTRODUCTION.....	7
1 Scope.....	8
2 Normative references	8
3 Terms and definitions	9
4 General requirement.....	10
5 General conditions for the tests	10
6 Classification.....	10
7 Marking and instructions.....	10
8 Protection against access to live parts.....	11
9 Starting of motor-operated appliances	11
10 Power input and current.....	11
11 Heating.....	11
12 Charging of metal-ion batteries.....	13
13 Leakage current and electric strength at operating temperature.....	13
14 Transient overvoltages	14
15 Moisture resistance	14
16 Leakage current and electric strength.....	14
17 Overload protection of transformers and associated circuits	14
18 Endurance	14
19 Abnormal operation	14
20 Stability and mechanical hazards.....	16
21 Mechanical strength	17
22 Construction	17
23 Internal wiring.....	17
24 Components	17
25 Supply connection and external flexible cords	17
26 Terminals for external conductors.....	18
27 Provision for earthing	18
28 Screws and connections	18
29 Clearances, creepage distances and solid insulation	18
30 Resistance to heat and fire	18
31 Resistance to rusting.....	18
32 Radiation, toxicity and similar hazards.....	18
Annexes	20
Annex B (normative) Battery-operated appliances, separable batteries and detachable batteries for battery-operated appliances	21
Bibliography.....	22

Figure 101 – Probe for measuring surface temperatures 19

Table 101 – Maximum temperature rises for specified external accessible surfaces
under normal operating conditions 13

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

[IEC 60335-2-43:2024](#)

<https://standards.itih.ai/catalog/standards/iec/5300b77e-548e-4703-b221-ea54a49ae79a/iec-60335-2-43-2024>

INTERNATIONAL ELECTROTECHNICAL COMMISSION

HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES – SAFETY –

Part 2-43: Particular requirements for clothes dryers and towel rails

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 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) IEC draws attention to the possibility that the implementation of this document may involve the use of (a) patent(s). IEC takes no position concerning the evidence, validity or applicability of any claimed patent rights in respect thereof. As of the date of publication of this document, IEC had not received notice of (a) patent(s), which may be required to implement this document. However, implementers are cautioned that this may not represent the latest information, which may be obtained from the patent database available at <https://patents.iec.ch>. IEC shall not be held responsible for identifying any or all such patent rights.

IEC 60335-2-43 has been prepared by IEC technical committee 61: Safety of household and similar electrical appliances. It is an International Standard.

This fifth edition cancels and replaces the fourth edition published in 2017. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

- a) alignment with IEC 60335-1:2020;
- b) conversion of some notes to normative text (Clause 1, 11.101, 15.101);

- c) addition of test probe 19 for accessibility of live parts and moving (8.1.1, 20.2, B.22.3, B.22.4);
- d) addition of accessible surface temperature limits (11.3, 11.8).

The text of this International Standard is based on the following documents:

Draft	Report on voting
61/7281/FDIS	61/7305/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 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/publications.

A list of all parts of the IEC 60335 series, under the general title: *Household and similar electrical appliances – Safety*, can be found on the IEC website.

This part 2 is to be used in conjunction with the latest edition of IEC 60335-1 and its amendments unless that edition precludes it; in that case, the latest edition that does not preclude it is used. It was established on the basis of the sixth edition (2020) of that standard.

NOTE 1 When "Part 1" is mentioned in this standard, it refers to IEC 60335-1.

This part 2 supplements or modifies the corresponding clauses in IEC 60335-1, so as to convert that publication into the IEC standard: Particular requirements for clothes dryers and towel rails.

When a particular subclause of Part 1 is not mentioned in this part 2, that subclause applies as far as is reasonable. When this standard states "addition", "modification" or "replacement", the relevant text in Part 1 is to be adapted accordingly.

NOTE 2 The following numbering system is used:

- subclauses, tables and figures that are numbered starting from 101 are additional to those in Part 1;
- unless notes are in a new subclause or involve notes in Part 1, they are numbered starting from 101, including those in a replaced clause or subclause;
- additional annexes are lettered AA, BB, etc.

NOTE 3 The following print types are used:

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

Words in **bold** in the text are defined in Clause 3. When a definition concerns an adjective, the adjective and the associated noun are also in bold.

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
- revised.

NOTE 4 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 12 months or later than 36 months from the date of publication.

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

[IEC 60335-2-43:2024](https://standards.iteh.ai/catalog/standards/iec/5300b77e-548e-4703-b221-ea54a49ae79a/iec-60335-2-43-2024)

<https://standards.iteh.ai/catalog/standards/iec/5300b77e-548e-4703-b221-ea54a49ae79a/iec-60335-2-43-2024>

INTRODUCTION

It has been assumed in the drafting of this International Standard that the execution of its provisions is entrusted to appropriately qualified and experienced persons.

Guidance documents concerning the application of the safety requirements for appliances can be accessed via TC 61 supporting documents on the IEC website

<https://www.iec.ch/tc61/supportingdocuments>

This information is given for the convenience of users of this International Standard and does not constitute a replacement for the normative text in this standard.

This standard recognizes the internationally accepted level of protection against hazards such as electrical, mechanical, thermal, fire and radiation of appliances when operated as in normal use taking into account the manufacturer's instructions. It also covers abnormal situations that can be expected in practice and takes into account the way in which electromagnetic phenomena can affect the safe operation of appliances.

This standard takes into account the requirements of IEC 60364 as far as possible so that there is compatibility with the wiring rules when the appliance is connected to the supply mains. However, national wiring rules can differ.

If an appliance within the scope of this standard also incorporates functions that are covered by another part 2 of IEC 60335, the relevant part 2 is applied to each function separately, as far as is reasonable. If applicable, the influence of one function on the other is taken into account.

When a part 2 standard does not include additional requirements to cover hazards dealt with in Part 1, Part 1 applies.

NOTE 1 This means that the technical committees responsible for the part 2 standards have determined that it is not necessary to specify particular requirements for the appliance in question over and above the general requirements.

This standard is a product family standard dealing with the safety of appliances and takes precedence over horizontal and generic standards covering the same subject.

NOTE 2 Horizontal publications, basic safety publications and group safety publications covering a hazard are not applicable since they have been taken into consideration when developing the general and particular requirements for the IEC 60335 series of standards.

An appliance that complies with the text of this standard will not necessarily be considered to comply with the safety principles of the standard if, when examined and tested, it is found to have other features that impair the level of safety covered by these requirements.

An appliance employing materials or having forms of construction differing from those detailed in the requirements of this standard may be examined and tested according to the intent of the requirements and, if found to be substantially equivalent, may be considered to comply with the standard.

NOTE 3 Standards dealing with non-safety aspects of household appliances are:

- IEC standards published by TC 59 concerning methods of measuring performance;
- CISPR 11, CISPR 14-1 and relevant IEC 61000-3 series standards concerning electromagnetic emissions;
- CISPR 14-2 concerning electromagnetic immunity;
- IEC standards published by TC 111 concerning environmental matters.

HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES – SAFETY –

Part 2-43: Particular requirements for clothes dryers and towel rails

1 Scope

This clause of Part 1 is replaced by the following.

This part of IEC 60335 deals with the safety of electric **clothes dryers** including **clothes dryers** intended for drying footwear or gloves, and **towel rails** for household and similar purposes, their **rated voltage** being not more than 250 V including direct current (DC) powered appliances and **battery-operated appliances**.

Appliances not intended for normal household use but that nevertheless can be a source of danger to the public, such as appliances intended to be used by laymen in shops, in light industry and on farms, are within the scope of this standard.

As far as is practicable, this standard deals with the common hazards presented by appliances that are encountered by all persons in and around the home. However, in general, it does not take into account:

- persons (including children) whose
 - physical, sensory or mental capabilities; or
 - lack of experience and knowledgeprevents them from using the appliance safely without supervision or instruction;
- children playing with the appliance.

Attention is drawn to the fact that:

- for appliances intended to be used in vehicles or on board ships or aircraft, additional requirements can be necessary;
- in many countries, additional requirements are specified by the national health authorities, the national authorities responsible for the protection of labour and similar authorities.

This standard does not apply to:

- spin extractors (IEC 60335-2-4);
- tumble dryers (IEC 60335-2-11);
- appliances intended exclusively for industrial purposes;
- appliances intended to be used in locations where special conditions prevail, such as the presence of a corrosive or explosive atmosphere (dust, vapour or gas).

2 Normative references

This clause of Part 1 is applicable.

3 Terms and definitions

This clause of Part 1 is applicable except as follows.

3.1 Definitions relating to physical characteristics

3.1.9 *Modification:* **normal operation**

Replace the first paragraph with the following:

operation of the appliance under the following conditions:

Textiles positioned over the racks or rails in accordance with the instructions. The textiles are pre-washed, double-hemmed cotton sheets having dimensions approximately 700 mm × 700 mm and a specific mass between 140 g/m² and 175 g/m² in the dry condition.

Four layers of textiles are used for appliances having a heated surface supporting the textiles. One layer is used for appliances in which the textiles are dried by a warm airflow.

Note 101 to entry: In case of doubt, the cotton sheets are conditioned for at least 24 h at a temperature of 20 °C ± 5 °C and a relative humidity of (60 ± 5) %.

For appliance with a cabinet, the cabinet shall be closed during operation.

For **clothes dryers** intended for drying footwear or gloves, having loads that cover all of the air outlets, if any, the air outlets are blocked with a number of layers of textile material that results in the most unfavourable condition without operation of a **protective device**.

3.5 Definitions relating to types of appliances

3.5.101 **clothes dryer**

appliance that does not have a mechanical action such as tumbling or spinning that is intended to dry clothes by air flow

Note 1 to entry: These appliances can also be suitable to dry footwear, gloves and the like.

Note 2 to entry: The clothes can be located on racks that are fixed or free-standing in a cabinet. The air circulation can be natural or forced.

3.5.102 **towel rail**

appliance to hold, warm and dry towels

Note 1 to entry: These appliances can also be suitable to dry swimwear, bath robes or the like.

3.6 Definitions relating to parts of appliances

3.6.101 **free space**

space with a volume exceeding 60 l where a child can be entrapped and which is accessible after opening any door or lid and removing any **detachable internal part**, including shelves and containers

Note 1 to entry: In calculating the volume, a space with any single dimension not exceeding 150 mm or any two orthogonal dimensions, each of which do not exceed 200 mm, is ignored.

4 General requirement

This clause of Part 1 is applicable.

5 General conditions for the tests

This clause of Part 1 is applicable.

6 Classification

This clause of Part 1 is applicable except as follows.

6.2 Addition:

Clothes dryers intended for drying footwear or gloves that when in use have electrical components located below or inserted inside the footwear or gloves shall be at least IPX2. All other appliances shall be at least IPX1.

7 Marking and instructions

This clause of Part 1 is applicable except as follows.

7.12 Addition:

The instructions for **clothes dryers** shall include the substance of the following:

WARNING: This appliance is intended only for drying textiles washed in water.

Instructions for appliances intended to be placed above 850 mm in normal use shall include the substance of the following:

Do not place this product lower than 850 mm from the floor during use.

7.12.1 Addition:

The installation instructions for **fixed towel rails** shall include the substance of the following:

WARNING: In order to avoid a hazard for very young children, this appliance shall be installed so that the lowest heated rail is at least 850 mm above the floor.

Instructions for other **fixed appliances** intended for installation above 850 mm in normal use shall include the substance of the following:

Do not mount this product lower than 850 mm from the floor.

The instructions for **fixed towel rails** likely to be used in a bathroom shall state that the **towel rail** is to be installed so that switches and other controls cannot be touched by a person in the bath or shower. This instruction is not necessary if the **towel rail** is classified as at least IPX4.