

# INTERNATIONAL STANDARD

## NORME INTERNATIONALE



**Household and similar electrical appliances – Test code for the determination of airborne acoustical noise –**

**Part 2-17: Particular requirements for dry-cleaning robots**

**Appareils électrodomestiques et analogues – Code d'essai pour la détermination du bruit aérien –**

**Partie 2-17: Exigences particulières pour les robots de nettoyage à sec**



## THIS PUBLICATION IS COPYRIGHT PROTECTED

Copyright © 2020 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  
[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 corrigendum or an amendment might have been published.

#### IEC publications search - [webstore.iec.ch/advsearchform](http://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 It also gives information on projects, replaced and withdrawn publications.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](http://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](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: [sales@iec.ch](mailto:sales@iec.ch).

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

The world's leading online dictionary on electrotechnology, containing more than 22 000 terminological entries 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)

67 000 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.

---

### 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](http://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](http://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](http://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](mailto:sales@iec.ch).

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

Le premier dictionnaire d'électrotechnologie en ligne au monde, avec plus de 22 000 articles terminologiques 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)

67 000 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.

# INTERNATIONAL STANDARD

# NORME INTERNATIONALE



---

**Household and similar electrical appliances – Test code for the determination of airborne acoustical noise –  
Part 2-17: Particular requirements for dry-cleaning robots**

**Appareils électrodomestiques et analogues – Code d'essai pour la détermination du bruit aérien –  
Partie 2-17: Exigences particulières pour les robots de nettoyage à sec**

INTERNATIONAL  
ELECTROTECHNICAL  
COMMISSION

COMMISSION  
ELECTROTECHNIQUE  
INTERNATIONALE

---

ICS 17.140.20

ISBN 978-2-8322-8479-7

**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.....	3
INTRODUCTION.....	5
1 Scope and object.....	6
2 Normative references .....	7
3 Terms and definitions .....	8
4 Measurement methods and acoustical environments .....	8
5 Instrumentation.....	9
6 Operation and location of appliances under test .....	9
7 Measurement of sound pressure levels.....	12
8 Calculation of sound pressure and sound power levels.....	13
9 Information to be recorded.....	14
10 Information to be reported .....	14
Annex A (normative) Standard test table.....	15
Annex B (normative) Test enclosure .....	15
Annex AA (normative) Fenced area .....	16
Bibliography.....	17
Figure AA.1 – Example of fence.....	16
Table 101 – Standard deviations of sound power levels .....	7
Table 102 – Standard deviations for declaration and verification .....	7

## INTERNATIONAL ELECTROTECHNICAL COMMISSION

**HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES –  
TEST CODE FOR THE DETERMINATION  
OF AIRBORNE ACOUSTICAL NOISE –**

**Part 2-17: Particular requirements for dry-cleaning robots**

**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) 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 60704-2-17 has been prepared by subcommittee 59F: Surface cleaning appliances of IEC technical committee 59: Performance of household and similar electrical appliances.

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

FDIS	Report on voting
59F/395/FDIS	59F/400/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 publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

This Part 2-17 is intended to be used in conjunction with the third edition (2010) of IEC 60704-1, *Household and similar electrical appliances – Test code for the determination of airborne acoustical noise – Part 1: General requirements*.

The relevant text of IEC 60704-1:2010 as amended by this publication establishes the test code for dry-cleaning robots.

This Part 2-17 supplements or modifies the corresponding clauses in IEC 60704-1:2010. When a particular subclause of IEC 60704-1:2010 is not mentioned in this Part 2-17, that subclause is applicable as far as reasonable. Where this standard states "addition", "modification" or "replacement", the relevant requirements, test specifications or explanatory matter in IEC 60704-1:2010 should be adapted accordingly.

Subclauses and tables that are additional to those in IEC 60704-1:2010 are numbered starting from 101.

Unless notes are in a new subclause or involve notes in IEC 60704-1:2010, they are numbered starting from 101, including those in a replaced clause or subclause.

In this document, the following print types are used:

- **terms defined in Clause 3: Arial bold.**

A list of all the parts in the IEC 60704 series, published under the general title *Household and similar electrical appliances – Test code for the determination of airborne acoustical noise*, can be found on the IEC website.

The committee has decided that the contents of this publication will remain unchanged until the stability 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.

**IMPORTANT – The 'colour inside' logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.**

## INTRODUCTION

The measuring conditions specified in this Part 2-17 provide for sufficient accuracy in determining the noise emitted and comparing the results of measurements taken by different laboratories, whilst simulating as far as possible the practical use of dry-cleaning robots.

It is recommended to consider the determination of noise levels as part of a comprehensive testing procedure covering many aspects of the properties and performance of dry-cleaning robots.

NOTE As stated in the introduction to IEC 60704-1:2010, this test code is concerned with airborne noise only.

# HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES – TEST CODE FOR THE DETERMINATION OF AIRBORNE ACOUSTICAL NOISE –

## Part 2-17: Particular requirements for dry-cleaning robots

### 1 Scope and object

This clause of IEC 60704-1:2010 is applicable except as follows:

#### 1.1 Scope

##### 1.1.1 General

*Replacement:*

These particular requirements apply to electrical dry-cleaning robots (including their accessories and their component parts) for household use or under conditions similar to those in households. This part of IEC 60704-2 applies to electrical dry-cleaning robots operating in dry conditions only.

NOTE Some additions and modifications for dry-cleaning robots operating in wet conditions are under consideration.

This part of IEC 60704-2 does not apply to dry-cleaning robots for industrial or professional purposes.

This document does not apply to

- manually operated vacuum cleaners, and
- dry-cleaning robots for outdoor use.

##### 1.1.2 Types of noise

*Replacement:*

The methods specified in ISO 3743-2 and ISO 3744 can be used for measuring noise emitted by electric dry-cleaning robots.

##### 1.1.3 Size of the source

*Replacement:*

The method specified in ISO 3744 is applicable to noise sources of any size. Limitations for the size of the source are given in Clause 5 of ISO 3743-2:2018. Although the dry-cleaning robot itself is a relatively small source, the covered floor area during the measurement comprises a much larger effective source.

### 1.2 Object

*Addition:*

This part of IEC 60704 describes the determination of the noise emission of dry-cleaning robots under normal operating conditions on carpet and hard floors.