IEC 60704-2-9

Edition 2.0 2024-06
REDLINE VERSION

INTERNATIONAL STANDARD

colour inside

IECNORM.COM : Click to view the full PDF of IEC 60704-2-9:2024 RLV

Household and similar electrical appliances – Test code for the determination of airborne acoustical noise –
Part 2-9: Particular requirements for electric hair care appliances

IEC 60704-2-9:2024-06 RLV(en)

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.

IEC Secretariat
3, rue de Varembé
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 It also gives information on projects, replaced and withdrawn publications.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.

IECNORM.COM : Click to view the full PDF of IEC 60704-2-9:2024 RLV

IEC 60704-2-9

Edition 2.0 2024-06
REDLINE VERSION

INTERNATIONAL STANDARD

colour inside

IECNORM.COM : Click to view the full PDF of IEC 60704-2-9:2024 RLV

Household and similar electrical appliances – Test code for the determination of airborne acoustical noise –
Part 2-9: Particular requirements for electric hair care appliances

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

ICS 97.170, 17.140.20

ISBN 978-2-8322-9158-0

Warning! Make sure that you obtained this publication from an authorized distributor.

® Registered trademark of the International Electrotechnical Commission

CONTENTS

IECNORM.COM : Click to view the full PDF of IEC 60704-2-9:2024 RLV

INTERNATIONAL ELECTROTECHNICAL COMMISSION

_____

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

Part 2-9: Particular requirements for electric hair care appliances

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.

IECNORM.COM : Click to view the full PDF of IEC 60704-2-9:2024 RLV

This redline version of the official IEC Standard allows the user to identify the changes made to the previous edition IEC 60704-2-9:2003. A vertical bar appears in the margin wherever a change has been made. Additions are in green text, deletions are in strikethrough red text.

IEC 60704-2-9 has been prepared by subcommittee 59L: Small household appliances, of IEC technical committee 59: Performance of household electrical appliances. It is an International Standard.

This second edition cancels and replaces the first edition published in 2003. This edition constitutes a technical revision.

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

a) Alignment with IEC 60704-1:2021.

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

Draft	Report on voting
59L/239/CDV	59L/253/RVC

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 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.

This part 2-9 is intended to be used in conjunction with the fourth edition of IEC 60704-1:2021: *Household and similar electrical appliances – Test code for the determination of airborne acoustical noise – Part 1: General requirements*.

The relevant text of IEC 60704-1:2021 as amended by this standard establishes the test code for electric hair care appliances.

This document supplements or modifies the corresponding clauses in IEC 60704-1:2021. When a particular subclause of IEC 60704-1:2021 is not mentioned in this document, that subclause applies as far as reasonable. Where this standard states "addition", "modification" or "replacement", the relevant requirements, test specification or explanatory matter in IEC 60704-1:2021 is adapted accordingly.

Subclauses or figures which are additional to those in IEC 60704-1:2021 are numbered starting from 101. Additional annexes are lettered AA, BB, etc.

IECNORM.COM : Click to view the full PDF of IEC 60704-2-9:2024 RLV

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.

IMPORTANT – The "colour inside" logo on the cover page of this document 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.

IECNORM.COM : Click to view the full PDF of IEC 60704-2-9:2024 RLV

INTRODUCTION

The measuring conditions specified in this document 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 hair care appliances.

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 electric hair care appliances.

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

IECNORM.COM : Click to view the full PDF of IEC 60704-2-9:2024 RLV

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

Part 2-9: Particular requirements for electric hair care appliances

IECNORM.COM : Click to view the full PDF of IEC 60704-2-9:2024 RLV

1 Scope ~~and object~~

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

~~1.1 Scope~~

~~1.1.1 General~~

Replacement:

This part of IEC 60704 applies to electric hand-held hairdryers for household and similar use supplied from mains, which operate with a flow of air.

These particular requirements can also be applied to analogous electrically operated devices such as hairstyling appliances, which produce the airflow by a fan.

Helmet-type hairdryers are excluded from this document.

This document does not apply to hair care appliances with radiant heating.

~~1.1.2 Types of noise~~

~~*Replacement:*~~

~~ISO 3743-1, ISO 3743-2 and ISO 3744 can be used for measuring noise emitted by electric hairdryers.~~

~~1.1.3 Size of the source~~

~~*Replacement:*~~

~~The method specified in ISO 3744 is applicable to noise sources of any size (limited only by available test environment). When applying ISO 3743-1 and ISO 3743-2, care should be taken that the maximum size of the electric hair care appliance under test fulfils the requirements specified in 1.3 of ISO 3743-1 and ISO 3743-2.~~

~~1.2 Object~~

~~*Addition:*~~

~~Requirements for the declaration of noise emission values are not within the scope of this standard.~~

~~NOTE~~ For determining and verifying noise emission values declared in product specifications, see IEC 60704-3.

~~2 Normative references~~

~~This clause of Part 1 is applicable.~~

3 Terms and definitions

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

Addition:

3.101
hand-held hairdryer
hairdryer which is held by hand during normal permanent use

3.102
hairstyling appliance
appliance for styling and/or curling hairs

Note 1 to entry: Hair styling appliances ~~may~~ can comprise brushes and combs.

3.103
helmet-type hairdryer
hairdryer, in which the drying is performed under a rigid or flexible hood

4 Measurement methods and acoustical environments

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

4.2 Direct method

Addition:

~~NOTE~~ If pure tone components are present in the noise emitted, proper precautions ~~should~~ shall be taken as specified in ISO 3743-2.

4.3 Comparison method

Addition:

~~NOTE~~ If pure tone components are present in the noise emitted, proper precautions ~~should~~ shall be taken as specified in ISO 3743-1 and ISO 3743-2.

4.4 Acoustical environments

4.4.1 General requirements and criterion for adequacy of the test environment

Replacement:

ISO 3743-1, ISO 3743-2 and ISO 3744 can be used for measuring noise emitted by electric hairdryers.

The method specified in ISO 3744 is applicable to noise sources of any size (limited only by the available test environment). When applying ISO 3743-1 and ISO 3743-2, the maximum size of the electric hair care appliance under test shall fulfil the requirements specified in ISO 3743-1:2010, 4.2 and in ISO 3743-2:2018, Clause 5.

IECNORM.COM : Click to view the full PDF of IEC 60704-2-9:2024 RLV

~~1.3~~4.5 Measurement uncertainties

4.5.2 Standard deviations on repeatability and reproducibility and standard deviations related to declaration and verification

Replacement:

The estimated values of standard deviations of sound power levels, determined according to this document, are given in Table 1:

Table 1 – Standard deviations of sound power levels

Standard deviation dB	
σ_r(repeatability)	σ_R(reproducibility)
0,4	0,8

~~*Addition:*~~

~~**1.101 Standard deviation for declaration and verification**~~

For the purpose of determining and verifying declared noise emission values according to IEC 60704-3, the following values given in Table 2 apply:

Table 2 – Standard deviations for declaration and verification

Standard deviation dB		
σ_P(production)	σ_t(total)	σ_M(reference)
0,5 to1,3	0,9 to1,5	1,5

5 Instrumentation

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

5.1 Instrumentation for measuring acoustical data

Addition:

Windscreens ~~should~~ shall be used if necessary and then corrections for change in the microphones sensitivity shall be added to the observed sound pressure levels.

6 Operation and location of appliances under test

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

IECNORM.COM : Click to view the full PDF of IEC 60704-2-9:2024 RLV

6.1 Equipping and pre-conditioning of appliances

6.1.1

Replacement:

Appliances shall be equipped as for ~~ordinary drying~~ normal use. They shall not be equipped with attachments such as nozzles, concentrators, diffusers, brushes, combs, etc. The air intake and especially the inlet filter shall be clean and free of fluff and hairs.

6.1.3

Replacement:

Prior to noise measurements, the appliance equipped in accordance with 6.1.1 shall have been run in for a total period of at least 5 min at the highest speed and temperature setting for normal permanent use. A boost position, if any, shall not be used.

NOTE 101 A boost position is a setting of a control for occasional use, which results in a higher temporary fan speed.

6.1.4

Replacement:

Immediately before each series of noise measurements, the appliance equipped in accordance with 6.1.1 is operated for stabilizing at the highest speed and temperature setting for normal permanent use for at least 2 min. A boost position, if any, shall not be used.

6.2 Supply of electric energy and of water or gas

6.2.1

Modification:

The voltage tolerance shall be ±0,5 %.

6.2.2 to **6.2.4** Not applicable.

6.4 Loading and operating of appliances during tests

6.4.2

Replacement:

The appliance shall be equipped according to 6.1.1.

The noise emission values shall be determined at the highest speed setting of the fan and the highest power setting of the heater for normal permanent use. Attachments shall be removed.

NOTE 101 Other possible speed and power settings (e.g. boost position, cold position, etc.) can be measured in addition. Additional measurements with accessories ~~may~~ can also be done.

The actual settings and configuration during the measurement shall be carefully recorded.

6.4.3 and **6.4.4** Not applicable.

IECNORM.COM : Click to view the full PDF of IEC 60704-2-9:2024 RLV

6.5 Location and mounting of appliances

6.5.1

Addition:

The outlet of the appliance shall be placed in a position which is appropriate for the practical use. ~~Care shall be taken to avoid~~ Restriction of the airflow of the hairdryer shall be avoided. This ~~has to~~ shall be considered at the inlet, the outlet and through the appliance.

The appliance shall be placed so as to prevent additional structure-borne noise. No other pieces than those delivered by the manufacturer shall be used.

6.5.~~2~~3

Addition:

Hand-held hairdryers and hairstyling appliances shall be positioned in such a way that the longitudinal axis of the appliance is located horizontally at a height of approximately 25 cm above the floor or above the reflecting plane. The handle or grip of the appliance shall be in its normal position, which is usually downwards.

7 Measurement of sound pressure levels

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

7.1 Microphone array, measurement surface and RSS location for essentially free-field conditions over reflecting plane(s)

7.1.1

Addition:

During measurements care shall be taken to prevent direct blowing to any microphone.

7.1.~~3~~4 Not applicable.

7.1.~~4~~5

Addition:

The longitudinal axis of the appliance shall point in the direction of the y-axis, in order to prevent direct blowing to a microphone.

7.1.~~5~~6 and **7.1.~~6~~7** Not applicable.

7.4 Measurements

7.4.1

Addition:

The A-weighted time-averaged sound pressure level shall be measured over a period of at least 30 s.

IECNORM.COM : Click to view the full PDF of IEC 60704-2-9:2024 RLV

7.4.4 Not applicable.

~~8 Calculation of sound pressure and sound power levels~~

~~This clause of Part 1 is applicable.~~

9 Information to be recorded

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

9.7 Electric supply, water supply, etc.

9.7.2 to **9.7.4** Not applicable.

9.12 Measurement data

9.12.5 Not applicable.

10 Information to be reported

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

10.3 Test conditions for the appliance

10.3.3 to **10.3.5** Not applicable.

10.3.11 Not applicable.

10.4 Acoustical data

10.4.10 Not applicable.

IECNORM.COM : Click to view the full PDF of IEC 60704-2-9:2024 RLV

Annexes

~~The annexes of Part 1 apply with the following exception:~~

Annex A
(normative)

Standard test table

This annex of IEC 60704-1:2021 is not applicable.

IECNORM.COM : Click to view the full PDF of IEC 60704-2-9:2024 RLV

Bibliography

Addition:

IEC 61855:~~2003~~2022, *Household and similar use electrical hair care appliances – Methods for measuring the performance*

_____

IECNORM.COM : Click to view the full PDF of IEC 60704-2-9:2024 RLV

IEC 60704-2-9

Edition 2.0 2024-06

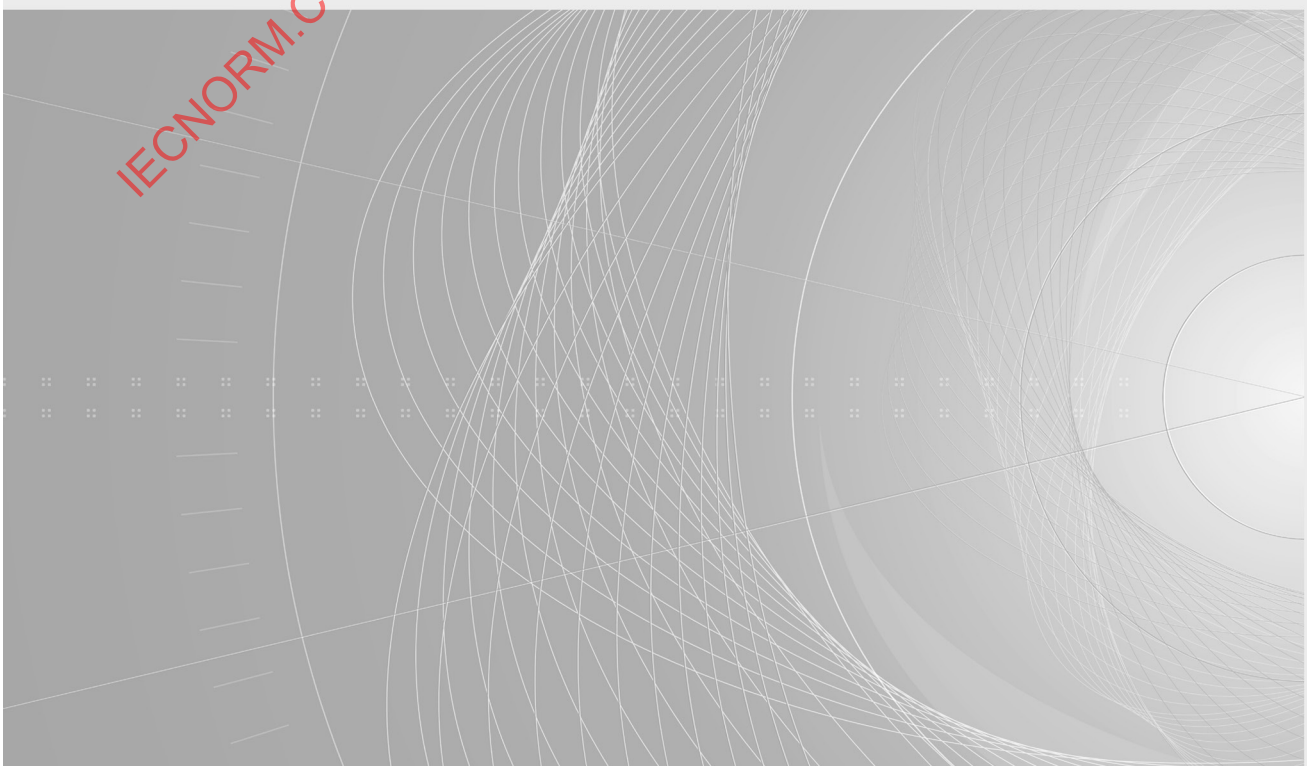
INTERNATIONAL STANDARD

NORME INTERNATIONALE

IECNORM.COM : Click to view the full PDF of IEC 60704-2-9:2024 RLV

Household and similar electrical appliances – Test code for the determination of airborne acoustical noise –
Part 2-9: Particular requirements for electric hair care appliances

Appareils électrodomestiques et analogues – Code d'essai pour la détermination du bruit aérien –
Partie 2-9: Exigences particulières pour les appareils électriques destinés aux soins des cheveux



IEC 60704-2-9:2024-06(en-fr)

CONTENTS

IECNORM.COM : Click to view the full PDF of IEC 60704-2-9:2024 RLV

INTERNATIONAL ELECTROTECHNICAL COMMISSION

_____

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

Part 2-9: Particular requirements for electric hair care appliances

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.

IECNORM.COM : Click to view the full PDF of IEC 60704-2-9:2024 RLV

IEC 60704-2-9 has been prepared by subcommittee 59L: Small household appliances, of IEC technical committee 59: Performance of household electrical appliances. It is an International Standard.

This second edition cancels and replaces the first edition published in 2003. This edition constitutes a technical revision.

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

a) Alignment with IEC 60704-1:2021.

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

Draft	Report on voting
59L/239/CDV	59L/253/RVC

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 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.

This part 2-9 is intended to be used in conjunction with the fourth edition of IEC 60704-1:2021: *Household and similar electrical appliances – Test code for the determination of airborne acoustical noise – Part 1: General requirements*.

The relevant text of IEC 60704-1:2021 as amended by this standard establishes the test code for electric hair care appliances.

This document supplements or modifies the corresponding clauses in IEC 60704-1:2021. When a particular subclause of IEC 60704-1:2021 is not mentioned in this document, that subclause applies as far as reasonable. Where this standard states "addition", "modification" or "replacement", the relevant requirements, test specification or explanatory matter in IEC 60704-1:2021 is adapted accordingly.

Subclauses or figures which are additional to those in IEC 60704-1:2021 are numbered starting from 101. Additional annexes are lettered AA, BB, etc.

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.

IECNORM.COM : Click to view the full PDF of IEC 60704-2-9:2024 RLV

INTRODUCTION

The measuring conditions specified in this document 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 hair care appliances.

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 electric hair care appliances.

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

IECNORM.COM : Click to view the full PDF of IEC 60704-2-9:2024 RLV

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

Part 2-9: Particular requirements for electric hair care appliances

1 Scope

Replacement:

This part of IEC 60704 applies to electric hand-held hairdryers for household and similar use supplied from mains, which operate with a flow of air.

These particular requirements can also be applied to analogous electrically operated devices such as hairstyling appliances, which produce the airflow by a fan.

Helmet-type hairdryers are excluded from this document.

This document does not apply to hair care appliances with radiant heating.

For determining and verifying noise emission values declared in product specifications, see IEC 60704-3.

3 Terms and definitions

Addition:

3.101
hand-held hairdryer
hairdryer which is held by hand during normal permanent use

3.102
hairstyling appliance
appliance for styling and/or curling hairs

Note 1 to entry: Hair styling appliances can comprise brushes and combs.

3.103
helmet-type hairdryer
hairdryer, in which the drying is performed under a rigid or flexible hood

4 Measurement methods and acoustical environments

4.2 Direct method

Addition:

If pure tone components are present in the noise emitted, proper precautions shall be taken as specified in ISO 3743-2.

IECNORM.COM : Click to view the full PDF of IEC 60704-2-9:2024 RLV

4.3 Comparison method

Addition:

If pure tone components are present in the noise emitted, proper precautions shall be taken as specified in ISO 3743-1 and ISO 3743-2.

4.4 Acoustical environments

4.4.1 General requirements and criterion for adequacy of the test environment

Replacement:

ISO 3743-1, ISO 3743-2 and ISO 3744 can be used for measuring noise emitted by electric hairdryers.

The method specified in ISO 3744 is applicable to noise sources of any size (limited only by the available test environment). When applying ISO 3743-1 and ISO 3743-2, the maximum size of the electric hair care appliance under test shall fulfil the requirements specified in ISO 3743-1:2010, 4.2 and in ISO 3743-2:2018, Clause 5.

4.5 Measurement uncertainties

4.5.2 Standard deviations on repeatability and reproducibility and standard deviations related to declaration and verification

Replacement:

The estimated values of standard deviations of sound power levels, determined according to this document, are given in Table 1:

Table 1 – Standard deviations of sound power levels

Standard deviation dB	
σ_r(repeatability)	σ_R(reproducibility)
0,4	0,8

For the purpose of determining and verifying declared noise emission values according to IEC 60704-3, the following values given in Table 2 apply:

Table 2 – Standard deviations for declaration and verification

Standard deviation dB		
σ_P(production)	σ_t(total)	σ_M(reference)
0,5 to1,3	0,9 to1,5	1,5

IECNORM.COM : Click to view the full PDF of IEC 60704-2-9:2024 RLV

5 Instrumentation

5.1 Instrumentation for measuring acoustical data

Addition:

Windscreens shall be used if necessary and then corrections for change in the microphones sensitivity shall be added to the observed sound pressure levels.

6 Operation and location of appliances under test

6.1 Equipping and pre-conditioning of appliances

6.1.1

Replacement:

Appliances shall be equipped as for normal use. They shall not be equipped with attachments such as nozzles, concentrators, diffusers, brushes, combs, etc. The air intake and especially the inlet filter shall be clean and free of fluff and hairs.

6.1.3

Replacement:

Prior to noise measurements, the appliance equipped in accordance with 6.1.1 shall have been run in for a total period of at least 5 min at the highest speed and temperature setting for normal permanent use. A boost position, if any, shall not be used.

NOTE 101 A boost position is a setting of a control for occasional use, which results in a higher temporary fan speed.

6.1.4

Replacement:

Immediately before each series of noise measurements, the appliance equipped in accordance with 6.1.1 is operated for stabilizing at the highest speed and temperature setting for normal permanent use for at least 2 min. A boost position, if any, shall not be used.

6.2 Supply of electric energy and of water or gas

6.2.1

Modification:

The voltage tolerance shall be ±0,5 %.

6.2.2 to **6.2.4** Not applicable.

IECNORM.COM : Click to view the full PDF of IEC 60704-2-9:2024 RLV

6.4 Loading and operating of appliances during tests

6.4.2

Replacement:

The appliance shall be equipped according to 6.1.1.

The noise emission values shall be determined at the highest speed setting of the fan and the highest power setting of the heater for normal permanent use. Attachments shall be removed.

NOTE 101 Other possible speed and power settings (e.g. boost position, cold position, etc.) can be measured in addition. Additional measurements with accessories can also be done.

The actual settings and configuration during the measurement shall be carefully recorded.

6.4.3 and **6.4.4** Not applicable.

6.5 Location and mounting of appliances

6.5.1

Addition:

The outlet of the appliance shall be placed in a position which is appropriate for the practical use. Restriction of the airflow of the hairdryer shall be avoided. This shall be considered at the inlet, the outlet and through the appliance.

The appliance shall be placed so as to prevent additional structure-borne noise. No other pieces than those delivered by the manufacturer shall be used.

6.5.3

Addition:

Hand-held hairdryers and hairstyling appliances shall be positioned in such a way that the longitudinal axis of the appliance is located horizontally at a height of approximately 25 cm above the floor or above the reflecting plane. The handle or grip of the appliance shall be in its normal position, which is usually downwards.

7 Measurement of sound pressure levels

7.1 Microphone array, measurement surface and RSS location for essentially free-field conditions over reflecting plane(s)

7.1.1

Addition:

During measurements care shall be taken to prevent direct blowing to any microphone.

7.1.4 Not applicable.

IECNORM.COM : Click to view the full PDF of IEC 60704-2-9:2024 RLV

7.1.5

Addition:

The longitudinal axis of the appliance shall point in the direction of the y-axis, in order to prevent direct blowing to a microphone.

7.1.6 and **7.1.7** Not applicable.

7.4 Measurements

7.4.1

Addition:

The A-weighted time-averaged sound pressure level shall be measured over a period of at least 30 s.

7.4.4 Not applicable.

9 Information to be recorded

9.7 Electric supply, water supply, etc.

9.7.2 to **9.7.4** Not applicable.

9.12 Measurement data

9.12.5 Not applicable.

10 Information to be reported

10.3 Test conditions for the appliance

10.3.3 to **10.3.5** Not applicable.

10.3.11 Not applicable.

10.4 Acoustical data

10.4.10 Not applicable.

IECNORM.COM : Click to view the full PDF of IEC 60704-2-9:2024 RLV

Annexes

Annex A
(normative)

Standard test table

This annex of IEC 60704-1:2021 is not applicable.

IECNORM.COM : Click to view the full PDF of IEC 60704-2-9:2024 RLV

Bibliography

Addition:

IEC 61855:2022, *Household and similar use electrical hair care appliances – Methods for measuring the performance*

_____

IECNORM.COM : Click to view the full PDF of IEC 60704-2-9:2024 RLV

IECNORM.COM : Click to view the full PDF of IEC 60704-2-9:2024 RLV

SOMMAIRE

IECNORM.COM : Click to view the full PDF of IEC 60704-2-9:2024 RLV

COMMISSION ÉLECTROTECHNIQUE INTERNATIONALE

_____

APPAREILS ÉLECTRODOMESTIQUES ET ANALOGUES – CODE D'ESSAI POUR LA DÉTERMINATION DU BRUIT AÉRIEN –

Partie 2-9: Exigences particulières pour les appareils électriques destinés aux soins des cheveux

AVANT-PROPOS

1) La Commission Electrotechnique Internationale (IEC) est une organisation mondiale de normalisation composée de l'ensemble des comités électrotechniques nationaux (Comités nationaux de l'IEC). L'IEC a pour objet de favoriser la coopération internationale pour toutes les questions de normalisation dans les domaines de l'électricité et de l'électronique. À cet effet, l'IEC – entre autres activités – publie des Normes internationales, des Spécifications techniques, des Rapports techniques, des Spécifications accessibles au public (PAS) et des Guides (ci-après dénommés "Publication(s) de l'IEC"). Leur élaboration est confiée à des comités d'études, aux travaux desquels tout Comité national intéressé par le sujet traité peut participer. Les organisations internationales, gouvernementales et non gouvernementales, en liaison avec l'IEC, participent également aux travaux. L'IEC collabore étroitement avec l'Organisation Internationale de Normalisation (ISO), selon des conditions fixées par accord entre les deux organisations.
2) Les décisions ou accords officiels de l'IEC concernant les questions techniques représentent, dans la mesure du possible, un accord international sur les sujets étudiés, étant donné que les Comités nationaux de l'IEC intéressés sont représentés dans chaque comité d'études.
3) Les Publications de l'IEC se présentent sous la forme de recommandations internationales et sont agréées comme telles par les Comités nationaux de l'IEC. Tous les efforts raisonnables sont entrepris afin que l'IEC s'assure de l'exactitude du contenu technique de ses publications; l'IEC ne peut pas être tenue responsable de l'éventuelle mauvaise utilisation ou interprétation qui en est faite par un quelconque utilisateur final.
4) Dans le but d'encourager l'uniformité internationale, les Comités nationaux de l'IEC s'engagent, dans toute la mesure possible, à appliquer de façon transparente les Publications de l'IEC dans leurs publications nationales et régionales. Toutes divergences entre toutes Publications de l'IEC et toutes publications nationales ou régionales correspondantes doivent être indiquées en termes clairs dans ces dernières.
5) L'IEC elle-même ne fournit aucune attestation de conformité. Des organismes de certification indépendants fournissent des services d'évaluation de conformité et, dans certains secteurs, accèdent aux marques de conformité de l'IEC. L'IEC n'est responsable d'aucun des services effectués par les organismes de certification indépendants.
6) Tous les utilisateurs doivent s'assurer qu'ils sont en possession de la dernière édition de cette publication.
7) Aucune responsabilité ne doit être imputée à l'IEC, à ses administrateurs, employés, auxiliaires ou mandataires, y compris ses experts particuliers et les membres de ses comités d'études et des Comités nationaux de l'IEC, pour tout préjudice causé en cas de dommages corporels et matériels, ou de tout autre dommage de quelque nature que ce soit, directe ou indirecte, ou pour supporter les coûts (y compris les frais de justice) et les dépenses découlant de la publication ou de l'utilisation de cette Publication de l'IEC ou de toute autre Publication de l'IEC, ou au crédit qui lui est accordé.
8) L'attention est attirée sur les références normatives citées dans cette publication. L'utilisation de publications référencées est obligatoire pour une application correcte de la présente publication.
9) L'IEC attire l'attention sur le fait que la mise en application du présent document peut entraîner l'utilisation d'un ou de plusieurs brevets. L'IEC ne prend pas position quant à la preuve, à la validité et à l'applicabilité de tout droit de brevet revendiqué à cet égard. À la date de publication du présent document, l'IEC n'a pas reçu notification qu'un ou plusieurs brevets pouvaient être nécessaires à sa mise en application. Toutefois, il y a lieu d'avertir les responsables de la mise en application du présent document que des informations plus récentes sont susceptibles de figurer dans la base de données de brevets, disponible à l'adresse https://patents.iec.ch. L'IEC ne saurait être tenue pour responsable de ne pas avoir identifié tout ou partie de tels droits de propriété.

L'IEC 60704-2-9 a été établie par le sous-comité 59L: Petits appareils domestiques, du comité d'études 59 de l'IEC: Aptitude à la fonction des appareils électrodomestiques et analogues. Il s'agit d'une Norme internationale.

Cette deuxième édition annule et remplace la première édition parue en 2003. Cette édition constitue une révision technique.

IECNORM.COM : Click to view the full PDF of IEC 60704-2-9:2024 RLV

Cette édition inclut les modifications techniques majeures suivantes par rapport à l'édition précédente:

a) Alignement sur l'IEC 60704-1:2021.

Le texte de cette Norme internationale est issu des documents suivants:

Projet	Rapport de vote
59L/239/CDV	59L/253/RVC

Le rapport de vote indiqué dans le tableau ci-dessus donne toute information sur le vote ayant abouti à son approbation.

La langue employée pour l'élaboration de cette Norme internationale est l'anglais.

Ce document a été rédigé selon les Directives ISO/IEC, Partie 2, il a été développé selon les Directives ISO/IEC, Partie 1 et les Directives ISO/IEC, Supplément IEC, disponibles sous www.iec.ch/members_experts/refdocs. Les principaux types de documents développés par l'IEC sont décrits plus en détail sous www.iec.ch/publications/.

Une liste de toutes les parties de la série IEC 60704, publiées sous le titre général *Appareils électrodomestiques et analogues – Code d'essai pour la détermination du bruit aérien*, se trouve sur le site web de l'IEC.

Cette partie 2-9 est destinée à être utilisée conjointement avec la quatrième édition de l'IEC 60704-1:2021: *Appareils électrodomestiques et analogues – Code d'essai pour la détermination du bruit aérien – Partie 1: Exigences générales*.

Le texte correspondant de l'IEC 60704-1:2021, modifié par la présente norme, constitue le code d'essai pour les appareils électriques destinés aux soins des cheveux.

Le présent document complète ou modifie les articles correspondants de l'IEC 60704-1:2021. Lorsqu'un paragraphe particulier de l'IEC 60704-1:2021 n'est pas mentionné dans ce document, ce paragraphe s'applique pour autant qu'il soit raisonnable. Lorsque la présente norme spécifie "addition", "modification" ou "remplacement", les exigences, modalités d'essai ou commentaires correspondants de l'IEC 60704-1:2021 sont adaptés en conséquence.

Les paragraphes ou les figures qui s'ajoutent à ceux de l'IEC 60704-1:2021 sont numérotés à partir de 101. Les annexes complémentaires sont appelées AA, BB, etc.

Le comité a décidé que le contenu de ce document ne sera pas modifié avant la date de stabilité indiquée sur le site web de l'IEC sous webstore.iec.ch dans les données relatives au document recherché. À cette date, le document sera

- reconduit,
- supprimé, ou
- révisé.

IECNORM.COM : Click to view the full PDF of IEC 60704-2-9:2024 RLV

INTRODUCTION

Les conditions de mesure spécifiées dans le présent document assurent une exactitude suffisante pour la détermination du bruit émis et lors de la comparaison des résultats des mesures dans différents laboratoires, tout en reproduisant, dans la mesure du possible, l'utilisation pratique des appareils destinés aux soins des cheveux.

Il est recommandé de considérer la détermination des niveaux de bruit comme faisant partie d'une procédure d'essais d'ensemble couvrant de nombreux aspects des propriétés et de l'aptitude à la fonction des appareils électriques destinés aux soins des cheveux.

NOTE Comme indiqué dans l'introduction de l'IEC 60704-1, le présent code d'essai concerne uniquement le bruit aérien.

IECNORM.COM : Click to view the full PDF of IEC 60704-2-9:2024 RLV