IEC 60704-2-9

Edition 2.0 2024-06
REDLINE VERSION

INTERNATIONAL STANDARD

colour inside

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)

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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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

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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.

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.

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.

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 ~~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.

~~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:~~

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.