

Household and similar electrical appliances - Test code for the determination of airborne acoustical noise - Part 2-7: Particular requirements for fans

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN IEC 60704-2-7:2020 sisaldab Euroopa standardi EN IEC 60704-2-7:2020 ingliskeelset teksti.	This Estonian standard EVS-EN IEC 60704-2-7:2020 consists of the English text of the European standard EN IEC 60704-2-7:2020.
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ICS 17.140.20, 23.120

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EUROPEAN STANDARD

EN IEC 60704-2-7

NORME EUROPÉENNE

EUROPÄISCHE NORM

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ICS 17.140.20; 23.120

Supersedes EN 60704-2-7:1998 and all of its amendments and corrigenda (if any)

English Version

**Household and similar electrical appliances - Test code for the determination of airborne acoustical noise - Part 2-7: Particular requirements for fans
(IEC 60704-2-7:2020)**

Appareils électrodomestiques et analogues - Code d'essai pour la détermination du bruit aérien - Partie 2-7: Exigences particulières pour les ventilateurs
(IEC 60704-2-7:2020)

Elektrische Geräte für den Hausgebrauch und ähnliche Zwecke - Prüfvorschrift für die Bestimmung der Luftschallemission - Teil 2-7: Besondere Bestimmungen für Lüfter
(IEC 60704-2-7:2020)

This European Standard was approved by CENELEC on 2020-02-27. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CENELEC member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.



European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

European foreword

The text of document 59L/168/CDV, future edition 2 of IEC 60704-2-7, prepared by SC 59L "Small household appliances" of IEC/TC 59 "Performance of household and similar electrical appliances" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 60704-2-7:2020.

The following dates are fixed:

- latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2020-11-27
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2023-02-27

This document supersedes EN 60704-2-7:1998 and all of its amendments and corrigenda (if any).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC shall not be held responsible for identifying any or all such patent rights.

Endorsement notice

The text of the International Standard IEC 60704-2-7:2020 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following notes have to be added for the standards indicated:

IEC 60665:2018	NOTE	Harmonized as EN IEC 60665:2019 (not modified)
IEC 60879:2019	NOTE	Harmonized as EN 60879:2019 (not modified)

Annex ZA (normative)

Normative references to international publications with their corresponding European publications

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

NOTE 1 Where an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: www.cenelec.eu.

Clause 2 of Part 1 is applicable except as follows:

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
ISO 3743-1	2010	Acoustics - Determination of sound power levels and sound energy levels of noise sources using sound pressure - Engineering methods for small movable sources in reverberant fields - Part 1: Comparison method for a hard-walled test room	EN ISO 3743-1	2010
ISO 3744	2010	Acoustics - Determination of sound power levels and sound energy levels of noise sources using sound pressure - Engineering methods for an essentially free field over a reflecting plane	EN ISO 3744	2010

Add the following references:

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60704-1	2010	Household and similar electrical appliances - Test code for the determination of airborne acoustical noise - Part 1: General requirements	EN 60704-1	2010
			+ A11	2012

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES –
TEST CODE FOR THE DETERMINATION OF
AIRBORNE ACOUSTICAL NOISE –****Part 2-7: Particular requirements for fans**

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.
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International Standard IEC 60704-2-7 has been prepared by subcommittee 59L: Small household appliances, of IEC technical committee 59: Performance of household and similar electrical appliances.

This second edition cancels and replaces the first edition published in 1997. This edition constitutes a technical revision.

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

- a) it includes additional fan categories as defined in IEC 60879:2019 and IEC 60665:2018;
- b) it includes standard deviations of sound power levels in 1.3;
- c) a comparison method has been added;
- d) the normative references have been updated (ISO 3744:2010 and ISO 3743-1:2010);
- e) it has been adjusted with regard to IEC 60704-1:2010.

The text of this standard is based on the following documents:

CDV	Report on voting
59L/168/CDV	59L/174/RVC

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

This document has been drafted in accordance with the ISO/IEC Directives, Part 2.

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 International Standard is to be used in conjunction with IEC 60704-1:2010, *Household and similar electrical appliances – Test code for the determination of airborne acoustical noise – Part 1: General requirements*.

NOTE When “Part 1” is mentioned in this standard, it refers to IEC 60704-1:2010.

The relevant text of Part 1 as amended by this standard establishes the test code for fans.

This Part 2-7 supplements or modifies the corresponding clauses in IEC 60704-1:2010, so as to establish the test code for fans. When a particular subclause of Part 1 is not mentioned in this Part 2-7, 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 Part 1 should be adapted accordingly.

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.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under “<http://webstore.iec.ch>” in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

INTRODUCTION

The measuring conditions specified in this Part 2-7 provide for sufficient accuracy in determining the noise emitted and the comparison of the results of measurements taken by different laboratories, whilst simulating as far as possible the practical use of household fans.

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 household fans.

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

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

Part 2-7: Particular requirements for fans

1 Scope and object

This clause of Part 1 is applicable except as follows:

1.1 Scope

1.1.1 General

Replacement:

This document applies to electrical fans (including their accessories and their component parts) for household and similar use, designed for AC or DC supply.

The motor, the impeller and their housing, if any, form a single unit.

These particular requirements apply to:

- conventional fans,
- table fans,
- pedestal fans,
- ceiling fans,
- bladeless fans,
- wall bracket fans,
- ceiling bracket fans,
- louver fans,
- tower fans,
- ventilating and partition ventilating fans.

This standard does not apply to:

- fans that are part of a ventilation system,
- fans designed exclusively for industrial purposes,
- fans that are part of an appliance (for example cooling fans),
- fans with additional functions (for example heating, humidifying).

Limitations for the use of this test code are given in the scope of IEC 60704-1.

1.1.2 Type of noise

Replacement:

The methods specified in ISO 3743-1, ISO 3743-2 and ISO 3744 can be used for measuring noise emitted by fans.

1.1.3 Size of source

Replacement:

The method specified in ISO 3744 is applicable to noise sources of any size. When applying ISO 3743-1 and ISO 3743-2, care should be taken to ensure that the maximum size of the appliance under test fulfils the requirements specified in 1.2 of ISO 3743-1:2010 and 1.3 of ISO 3743-2:1994.

1.2 Object

Addition:

This document describes the determination of the noise emission of household fans in normal operation at maximum speed. Other speeds can, in addition, be used. Requirements for the declaration of noise emission values are not within the scope of this document.

The aim of this document is to give direction for measuring the noise in a room resulting from the operation of a fan.

NOTE 101 For determining and verifying noise emission values declared in product specifications, see IEC 60704-3.

1.3 Measurement uncertainty

Replacement:

The estimated values of standard deviations of sound power levels determined in accordance with this document are given in Table 101:

Table 101 – Standard deviations of sound power levels

Standard deviation (dB)	
σ_r (repeatability)	σ_R (reproducibility)
0,4	1,0

Addition:

1.101 Standard deviation for declaration and verification

For the purpose of determining and verifying declared noise emission values in accordance with IEC 60704-3, the values in Table 102 apply:

Table 102 – Standard deviations for declaration and verification

Standard deviation (dB)		
σ_P (production)	σ_t (total)	σ_M (reference)
0,5 to 1,0	1,0 to 1,4	1,5

2 Normative references

This clause of Part 1 is applicable except as follows:

Replacement: