SVENSK STANDARD SS-EN IEC 60704-2-1

Fastställd	Utgåva	Sida	Ansvarig kommitté
2021-01-27	3	1 (1+21)	SEK TK 59

Elektriska hushållsapparater och liknande bruksföremål – Provningsmetod för bestämning av luftburet buller – Del 2-1: Särskilda fordringar på dammsugare

Household and similar electrical appliances –
Test code for the determination of airborne acoustical noise –
Part 2-1: Particular requirements for dry vacuum cleaners

Som svensk standard gäller europastandarden EN IEC 60704-2-1:2020. Den svenska standarden innehåller den officiella engelska språkversionen av EN IEC 60704-2-1:2020.

Nationellt förord

Europastandarden EN IEC 60704-2-1:2020

består av:

– **europastandardens ikraftsättningsdokument,** utarbetat inom CENELEC
– **IEC 60704-2-1, Fourth edition, 2020 - Household and similar electrical appliances - Test code for the determination of airborne acoustical noise - Part 2-1: Particular requirements for dry vacuum cleaners**

utarbetad inom International Electrotechnical Commission, IEC.

Standarden ska användas tillsammans med SS-EN 60704-1, utgåva 3, 2010.

Tidigare fastställd svensk standard SS-EN 60704-2-1, utgåva 2, 2015, gäller ej fr o m 2023-12-04.

ICS 17.140.20; 97.080.00

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN IEC 60704-2-1

December 2020

ICS 17.140.20; 97.080

Supersedes EN 60704-2-1:2015 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 2-1: Particular requirements for dry vacuum cleaners (IEC 60704-2-1:2020)

Appareils électrodomestiques et analogues - Code d'essai pour la détermination du bruit aérien - Partie 2-1: Exigences particulières pour les aspirateurs à sec (IEC 60704-2-1:2020)

Elektrische Geräte für den Hausgebrauch und ähnliche Zwecke - Prüfvorschrift für die Bestimmung der Luftschallemission - Teil 2-1: Besondere Anforderungen an Trockensauger (IEC 60704-2-1:2020)

This European Standard was approved by CENELEC on 2020-12-04. 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

Ref. No. EN IEC 60704-2-1:2020 E

European foreword

The text of document 59F/399/FDIS, future edition 4 of IEC 60704-2-1, prepared by SC 59F "Surface cleaning 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 60704-2-1:2020.

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) 2021-09-04
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2023-12-04

This document supersedes EN 60704-2-1:2015 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.

This document has been prepared under a mandate given to CENELEC by the European Commission and the European Free Trade Association.

Endorsement notice

The text of the International Standard IEC 60704-2-1:2020 was approved by CENELEC as a European Standard without any modification.

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.

Annex ZA of EN 60704-1:2010 is applicable except as follows:

Add the following references:

Publication	Year	Title	EN/HD	Year
IEC/TS 62885-1	-	Surface cleaning appliances - Part 1: General requirements on test material and test equipment	-	-
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

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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 2-1: Particular requirements for dry vacuum cleaners

FOREWORD

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International Standard IEC 60704-2-1 has been prepared by subcommittee 59F: Surface cleaning appliances, of IEC technical committee 59: Performance of household and similar electrical appliances.

This fourth edition cancels and replaces the third edition published in 2014. This edition constitutes a technical revision.

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

a) product scope is extended to cordless and similar vacuum cleaners;
b) definitions of "cleaning head", "active nozzle" and "standard Wilton test carpet" have been added;
c) specification of standard Wilton test carpet has been removed; reference is made to IEC TS 62885-1;

d) specific requirements on equipping and pre-conditioning have been added;

e) topic ageing of test carpet is addressed.

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

FDIS	Report on voting
59F/399/FDIS	59F/408/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 document has been drafted in accordance with the ISO/IEC Directives, Part 2.

This Part 2-1 is intended 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 document establishes the test code for vacuum cleaners.

This Part 2-1 supplements or modifies the corresponding clauses in IEC 60704-1:2010. When a particular subclause of Part 1 is not mentioned in this Part 2-1, 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 additional to those in Part 1 are numbered starting from 101. Additional annexes are lettered AA, BB, etc.

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.

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 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 of IEC 60704 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 vacuum cleaners.

It is recommended to consider the determination of noise levels as part of a comprehensive testing procedure covering many aspects of properties and performance of household vacuum cleaners.

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 2-1: Particular requirements for dry vacuum cleaners

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 is applicable for the determination of airborne acoustical noise of mains operated and cordless dry vacuum cleaners for household use or under conditions similar to those in households.

This part of IEC 60704 does not apply to vacuum cleaners for industrial or professional purposes.

NOTE Particular requirements for dry cleaning robots are specified in IEC 60704-2-17.

1.1.2 Types of noise

Replacement:

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

1.1.3 Size of the 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, the maximum size of the appliance under test should fulfil the requirements specified in 1.2 of ISO 3743-1:2010 and 1.3 of ISO 3743-2:1994.

1.2 Object

Addition:

This part of IEC 60704 describes the determination of the noise emission of vacuum cleaners under normal operating conditions on carpet and hard floor in accordance with 4.6 of IEC 62885-2.

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

1.3 Measurement uncertainty

Replacement:

For vacuum cleaners designed for cleaning carpets the estimated values of standard deviations of sound power levels determined in accordance with this part of IEC 60704 are provided in Table 101.

Table 101 – Standard deviations of sound power levels determined on carpets

Standard deviation (dB)	
σ_r (repeatability)	σ_R (reproducibility)
0,3	0,8

For vacuum cleaners designed for cleaning hard floors the estimated values of standard deviations of sound power levels determined in accordance with this part of IEC 60704 are provided in Table 102.

Table 102 – Standard deviations of sound power levels determined on hard floors

Standard deviation (dB)	
σ_r (repeatability)	σ_R (reproducibility)
0,2	0,6

NOTE 101 The values in Table 101 and Table 102 are derived from the results of a round robin test (RRT) conducted in 2010/2011 with 4 different vacuum cleaners (passive and active) in 8 participating laboratories.

Addition:

1.101 Standard deviation for declaration and verification

For the purpose of determining and verifying declared noise emission values for vacuum cleaners designed for cleaning carpets, in accordance with IEC 60704-3, the following values provided in Table 103 apply:

Table 103 – Standard deviations for declaration and verification for vacuum cleaners for carpets

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

For the purpose of determining and verifying declared noise emission values for vacuum cleaners designed for cleaning hard floors, in accordance with IEC 60704-3, the following values provided in Table 104 apply:

Table 104 – Standard deviations for declaration and verification for vacuum cleaners for hard floors

Standard deviation (dB)		
σ_P (production)	σ_t (total)	σ_M (reference)
0,5 to 1,0	0,8 to 1,2	1,5

2 Normative references

This clause of Part 1 is applicable except as follows:

Addition:

IEC TS 62885-1, *Surface cleaning appliances – Part 1: General requirements on test material and test equipment*

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*

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*