



BSI Standards Publication

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

Part 2-4: Particular requirements for washing machines and spin extractors

This is a preview of "BS EN 60704-2-4:2012...". [Click here to purchase the full version from the ANSI store.](#)

National foreword

This British Standard is the UK implementation of EN 60704-2-4:2012+A11:2020. It is derived from IEC 60704-2-4:2011. It supersedes BS EN 60704-2-4:2012, which is withdrawn.

The start and finish of text introduced or altered by amendment is indicated in the text by tags. Tags indicating changes to changes to text carry the number of the CENELEC amendment. For example, text altered by CENELEC amendment A11 is indicated by A11 A11.

The CENELEC common modifications have been implemented at the appropriate places in the text. The start and finish of each common modification is indicated in the text by tags C C.

The UK participation in its preparation was entrusted to Technical Committee CPL/59, Performance of household electrical appliances.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

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Compliance with a British Standard cannot confer immunity from legal obligations.

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| Date | Text affected |
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EUROPÄISCHE NORM

April 2020

ICS 17.140.20; 97.060

Supersedes EN 60704-2-4:2001

English version

**Household and similar electrical appliances -
Test code for the determination of airborne acoustical noise -
Part 2-4: Particular requirements for washing machines and spin
extractors
(IEC 60704-2-4:2011, modified)**

Appareils électrodomestiques et
analogues -
Code d'essai pour la détermination du
bruit aérien -
Partie 2-4: Exigences particulières pour
les machines à laver le linge et les
essoreuses centrifuges
(CEI 60704-2-4:2011, modifiée)

Elektrische Geräte für den Hausgebrauch
und ähnliche Zwecke -
Prüfvorschrift für die Bestimmung der
Luftschallemission -
Teil 2-4: Besondere Anforderungen an
Waschmaschinen und Wäscheschleudern
(IEC 60704-2-4:2011, modifiziert)

This European Standard was approved by CENELEC on 2012-04-13. 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, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

CENELEC

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

Management Centre: Avenue Marnix 17, B - 1000 Brussels

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European foreword

The text of document 59D/379/CDV, future edition 3 of IEC 60704-2-4, prepared by IEC/SC 59D, "Home laundry appliances", of IEC TC 59, "Performance of household electrical appliances", was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 60704-2-4:2012.

A draft amendment, which covers common modifications to IEC 60704-2-4 (59D/379/CDV), was prepared by CLC/TC 59X "Performance of household and similar electrical appliances" and approved by CENELEC.

The following dates are fixed:

- latest date by which this document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2013-04-13
- latest date by which the national standards conflicting with this document have to be withdrawn (dow) 2015-04-13

This document supersedes EN 60704-2-4:2001.

EN 60704-2-4:2012 includes the following significant technical changes with respect to EN 60704-2-4:2001:

- measurement uncertainty and standard deviations are taken into account,
- definitions of standard test load and standard test program are modified,
- test enclosure was replaced by common test enclosure defined in Part 1,
- information to be reported is modified.

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

EN 60704-2-4 is intended to be used in conjunction with EN 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 EN 60704-1.

The relevant text of Part 1 as amended by this publication establishes the test code for washing machines and spin extractors.

EN 60704-2-4 supplements or modifies the corresponding clauses in EN 60704-1. When a particular subclause of Part 1 is not mentioned in EN 60704-2-4, 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.

This is a preview of "BS EN 60704-2-4:2012...". [Click here to purchase the full version from the ANSI store.](#)

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.

Endorsement notice

The text of the International Standard IEC 60704-2-4:2011 was approved by CENELEC as a European Standard with agreed common modifications.

In the official version, for Bibliography, the following note has to be added for the standard indicated:

Addition to EN 60704-1:2010:

IEC 60704-2-6 NOTE Harmonized as EN 60704-2-6.

European foreword to amendment A11

This document (EN 60704-2-4:2012/A11:2020) has been prepared by CLC/TC 59X "Performance of household and similar electrical appliances".

The following dates are fixed:

- latest date by which this document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2020-01-13
- latest date by which the national standards conflicting with this document have to be withdrawn (dow) 2023-01-13

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

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Annex ZA (normative)

Normative references to international publications with their corresponding European publications

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

NOTE When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

Addition to EN 60704-1:2010 :

| <u>Publication</u> | <u>Year</u> | <u>Title</u> | <u>EN/HD</u> | <u>Year</u> |
|--------------------|-------------|--|------------------|-------------|
| IEC 60456 (mod) | 2010 | Clothes washing machines for household use - Methods for measuring the performance | EN 60456 + AC | 2011 |
| + corr. September | 2011 | | | 2011 |

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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

**Part 2-4: Particular requirements for washing machines
and spin extractors**

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 60704-2-4 has been prepared by subcommittee 59D: Home laundry appliances, of IEC technical committee 59: Performance of household and similar electrical appliances.

This third edition cancels and replaces the second edition (2001). Main changes are:

- measurement uncertainty and standard deviations are taken into account,
- definitions of standard test load and standard test program are modified,
- test enclosure was replaced by common test enclosure defined in Part 1,
- information to be reported is modified.

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

| CDV | Report on voting |
|-------------|------------------|
| 59D/379/CDV | 59D/387/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 publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

This Part 2-4 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*.

NOTE When "Part 1" is mentioned in this standard, it refers to IEC 60704-1.

The relevant text of Part 1 as amended by this publication establishes the test code for washing machines and spin extractors.

This Part 2-4 supplements or modifies the corresponding clauses in IEC 60704-1. When a particular subclause of Part 1 is not mentioned in this Part 2-4, 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, 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.

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INTRODUCTION

The measuring conditions specified in this Part 2-4 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 household washing machines and spin extractors.

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 washing machines and spin extractors.

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 2-4: Particular requirements for washing machines and spin extractors

1 Scope and object

This clause of Part 1 is applicable except as follows:

1.1 Scope

1.1.1 General

Addition:

These particular requirements apply to single unit electrical washing machines and the washing and spinning function of combined appliances for household and similar use and to spin extractors for household and similar use.

NOTE 101 For drying function, see IEC 60704-2-6.

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 washing machines and spin extractors.

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, care should be taken that the maximum size of the washing machine or spin extractor 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 101 For determining and verifying noise emission values declared in product specifications, see IEC 60704-3.

1.3 Measurement uncertainty

Replacement:

For washing machines the estimated values of standard deviations of sound power levels, determined according to this standard, are as indicated in Table 101: