

SLOVENSKI STANDARD

SIST EN 60704-2-4:1998

01-januar-1998

Test code for the determination of airborne acoustical noise emitted by household and similar electrical appliances - Part 2: Particular requirements for washing machines and spin extractors (IEC 704-2-4:1989)

Test code for the determination of airborne acoustical noise emitted by household and similar electrical appliances - Part 2: Particular requirements for washing machines and spin extractors (IEC 704-2-4:1989)

Prüfvorschrift für die Bestimmung der Luftschallemission von elektrischen Geräten für den Hausgebrauch und ähnliche Zwecke -- Teil 2: Besondere Anforderungen an Waschmaschinen und Wäscheschleudern

Code d'essai pour la détermination du bruit aérien émis par les appareils électrodomestiques et analogues -- Partie 2: Règles particulières pour les machines à laver le linge et pour les essoreuses centrifuges

Ta slovenski standard je istoveten z: EN 60704-2-4:1994

ICS:

17.140.20	Emisija hrupa naprav in opreme	Noise emitted by machines and equipment
97.060	Aparati za nego perila	Laundry appliances

SIST EN 60704-2-4:1998

en

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN 60704-2-4:1998

<https://standards.iteh.ai/catalog/standards/sist/af76b623-ffc9-4f73-92b7-1722370a5432/sist-en-60704-2-4-1998>

ICS 17.140.20

Supersedes HD 423.2.4 S1:1989

Descriptors: Acoustic, acoustical measurement, test code, airborne
acoustical noise, noise of machinery, household electrical
appliance, clothes washing machine, particular requirement

ENGLISH VERSION

Test code for the determination of airborne
acoustical noise emitted by household and similar
electrical appliances
Part 2: Particular requirements for washing machines
and spin extractors
(IEC 704-2-4:1989)

Code d'essai pour la
détermination du bruit aérien
émis par les appareils
électrodomestiques et analogues
Deuxième partie:
Règles particulières pour les
machines à laver le linge et
pour les essoreuses centrifuges
(CEI 704-2-4:1989)

Prüfvorschrift für die
Bestimmung der
Luftschallemission von
elektrischen Geräten für den
Hausgebrauch und ähnliche
Zwecke
Teil 2: Besondere Anforderungen
an Waschmaschinen und Wäscheschleudern
(IEC 704-2-4:1989)

This European Standard was approved by CENELEC on 1994-07-05.
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 Central Secretariat 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 Central Secretariat
has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium,
Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg,
Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

CENELEC

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

Central Secretariat: rue de Stassart 35, B-1050 Brussels

FOREWORD

At the request of CENELEC Technical Committee TC 59X, Consumer information related to household electrical appliances, HD 423.2.4 S1:1989 (IEC 704-2-4:1989) was submitted to the CENELEC voting procedure for conversion into a European Standard.

The text of the International Standard was approved by CENELEC as EN 60704-2-4 on 5 July 1994.

The following dates were fixed:

- latest date of publication of an identical national standard (dop) 1995-07-15
- latest date of withdrawal of conflicting national standards (dow) -

Annexes designated "normative" are part of the body of the standard. Annexes designated "informative" are given only for information. In this standard, annex AA is informative and annex ZA is normative.

iTeh STANDARD PREVIEW **ENDORSEMENT NOTICE** **(standards.iteh.ai)**

The text of the International Standard IEC 704-2-4:1989 was approved by CENELEC as a European Standard without any modification.
1722370a5432/sist-en-60704-2-4-1998



ANNEX ZA (normative)

OTHER INTERNATIONAL PUBLICATIONS QUOTED IN THIS STANDARD
WITH THE REFERENCES OF THE RELEVANT EUROPEAN PUBLICATIONS

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

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

IEC Publication	Date	Title	EN/HD	Date
-----	----	-----	-----	----
456	1974	Methods for measuring the performance of electric clothes washing machines for household use	HD 377 S1*	1979
704-1	1982	Test code for the determination of airborne acoustical noise emitted by household and similar electrical appliances - Part 1: General requirements	EN 60704-1	1994
804	1985	Integrating-averaging sound level meters	EN 60804*	1994
https://standards.iteh.ai/catalog/standards/sist/af76b623-f1cb-4f73-92b7-1722370a5432/sist-en-60704-2-4-1998				

Other publications quoted:

ISO 3055	1985	Kitchen equipment - Coordinating sizes
ISO 3743	1976	Acoustics - Determination of sound power levels of noise sources - Engineering methods for special reverberation test rooms
ISO 3744	1981	Acoustics - Determination of sound power levels of noise sources - Engineering methods for free-field conditions over a reflecting plane
ISO 3801	1977	Textiles - Woven fabrics - Determination of mass per unit length and mass per unit area
ISO 3932	1976	Textiles - Woven fabrics - Measurement of width of pieces
ISO 3933	1976	Textiles - Woven fabrics - Measurement of length of pieces
ISO 7211/2	1984	Textiles - Woven fabrics - Construction - Methods of analysis - Part 2: Determination of number of threads per unit length

* HD 377 S1 is superseded by EN 60456:1994, which is based on IEC 456:1994
EN 60804 includes A1:1989 to IEC 804

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN 60704-2-4:1998

<https://standards.iteh.ai/catalog/standards/sist/af76b623-ffc9-4f73-92b7-1722370a5432/sist-en-60704-2-4-1998>

**CEI
IEC
704-2-4**

Numéro de référence
Reference number
CEI/IEC 704-2-4: 1989

CONTENTS

	Page
FOREWORD	5
PREFACE	5
INTRODUCTION	9
 Clause	
1. Scope and object	9
2. References	11
3. Terms and definitions	11
4. Measurement methods and acoustical environments	13
5. Instrumentation	13
6. Operation and location of appliances under test	13
7. Measurement of noise levels	23
8. Calculation of sound pressure and sound power levels	23
9. Information to be recorded	25
10. Information to be reported	25
 APPENDICES	 27

INTERNATIONAL ELECTROTECHNICAL COMMISSION

TEST CODE FOR THE DETERMINATION OF AIRBORNE ACOUSTICAL NOISE
EMITTED BY HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCESPart 2: Particular requirements for washing machines
and spin extractors

FOREWORD

- 1) The formal decisions or agreements of the IEC on technical matters, prepared by Technical Committees on which all the National Committees having a special interest therein are represented, express, as nearly as possible, an international consensus of opinion on the subjects dealt with.
- 2) They have the form of recommendations for international use and they are accepted by the National Committees in that sense.
- 3) In order to promote international unification, the IEC expresses the wish that all National Committees should adopt the text of the IEC recommendation for their national rules in so far as national conditions will permit. Any divergence between the IEC recommendation and the corresponding national rules should, as far as possible, be clearly indicated in the latter.

SIST EN 60704-2-4:1998

[https://standards.iteh.ai/catalog/standards/sist/af76b623-f1cb-4f73-92b7-](https://standards.iteh.ai/catalog/standards/sist/af76b623-f1cb-4f73-92b7-1722370a5432/sist-en-60704-2-4-1998)

1722370a5432/sist-en-60704-2-4-1998

PREFACE

This standard has been prepared by Sub-Committee 59D: Home Laundry Appliances, of IEC Technical Committee No. 59: Performance of Household Electrical Appliances.

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

Six Months' Rule	Report on Voting
59D(C0)20	59D(C0)24

Further information can be found in the Report on Voting indicated in the above table.

This Part 2 is intended to be used in conjunction with IEC Publication 704-1, first edition, 1982.

The clauses of this Part 2 supplement or modify the corresponding clauses in IEC Publication 704-1, so as to convert that publication into the IEC standard: Test code for the determination of airborne acoustical noise emitted by washing machines and spin extractors (first edition).

704-2-4 © IEC

- 7 -

Where a particular sub-clause of Part 1 is not mentioned in this Part 2, that sub-clause applies as far as is reasonable. Where this Part 2 states "addition", "modification" or "replacement", the relevant requirement, test specification or explanatory matter in Part 1 should be adapted accordingly.

Sub-clauses or figures which are additional to those in Part 1 are numbered starting from 101. Additional appendices are lettered AA, BB, etc.

Other IEC publications quoted in this standard:

Publications Nos. 456 (1974): Methods for measuring the performance of electric clothes washing machines for household use.

704-1 (1982): Test code for the determination of airborne acoustical noise emitted by household and similar electrical appliances, Part 1: General requirements.

804 (1985): Integrating-averaging sound level meters.

Other publications quoted:

ISO standard 3055 (1985): Kitchen equipment - Coordinating sizes.

ISO standard 3743 (1976): Acoustics - Determination of sound power levels of noise sources - Engineering methods for special reverberation test rooms.

<https://standards.iteh.ai/catalog/standards/sist/en-60704-2-4-1998/1722370a5432/sist-en-60704-2-4-1998>

ISO standard 3744 (1981): Acoustics - Determination of sound power levels of noise sources - Engineering methods for free-field conditions over a reflecting plane.

ISO standard 3801 (1977): Textiles - Woven fabrics - Determination of mass per unit length and mass per unit area.

ISO standard 3932 (1976): Textiles - Woven fabrics - Measurement of width of pieces.

ISO standard 3933 (1976): Textiles - Woven fabrics - Measurement of length of pieces.

ISO standard 7211/2 (1984): Textiles - Woven fabrics - Construction - Methods of analysis - Part 2: Determination of number of threads per unit length.

**TEST CODE FOR THE DETERMINATION OF AIRBORNE ACOUSTICAL NOISE
EMITTED BY HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES****Part 2: Particular requirements for washing machines
and spin extractors****INTRODUCTION**

The measuring conditions specified in this Part 2 simulate as far as possible the practical use of washing machines and spin extractors taking into account the steadiness of the noise emitted and reproducibility in different laboratories. The textile load is standardized on the basis of those used for measuring performance. To avoid unsteadiness caused by foaming, tests are carried out with unsoiled loads and without detergents or rinsing aids.

It is recommended to consider noise data as part of performance data.

Note.- As stated in the introduction to Publication 704-1, this code is concerned with airborne noise only; however, it is emphasized that for large household appliances, such as washing machines, the generation of noise by vibrations transmitted through floors, walls, etc. may contribute significantly to the noise burden experienced under practical conditions.

SIST EN 60704-2-4:1998

[https://standards.iteh.ai/catalog/standards/sist/af76b623-f1cb-4f73-92b7-](https://standards.iteh.ai/catalog/standards/sist/af76b623-f1cb-4f73-92b7-1722370a5432/sist-en-60704-2-4-1998)

1. Scope and object [1722370a5432/sist-en-60704-2-4-1998](https://standards.iteh.ai/catalog/standards/sist/af76b623-f1cb-4f73-92b7-1722370a5432/sist-en-60704-2-4-1998)

This clause of Part 1 is applicable except as follows:

1.1 Scope

Replacement:

This standard applies to single unit electric washing machines for household and similar use, and to spin extractors.

Limitations for the use of this test code are given in the scope clause of IEC Publication 704-1.

1.2 Object

Addition:

The object of this test code is to describe the procedure for the measurement of noise emitted by washing machines during the main wash and spin period (if any) as well as noise emitted by spin extractors.