



NSAI
Standards

Irish Standard

I.S. EN 60704-2-14:2013&A11:2015&A1:2019

Household and similar electrical appliances - Test code for the determination of airborne acoustical noise
- Part 2-14: Particular requirements for refrigerators, frozen-food storage cabinets and food freezers

I.S. EN 60704-2-14:2013&A11:2015&A1:2019

Incorporating amendments/corrigenda/National Annexes issued since publication:

EN 60704-2-14:2013/A11:2015

EN 60704-2-14:2013/A1:2019

The National Standards Authority of Ireland (NSAI) produces the following categories of formal documents:

I.S. xxx: Irish Standard — national specification based on the consensus of an expert panel and subject to public consultation.

S.R. xxx: Standard Recommendation — recommendation based on the consensus of an expert panel and subject to public consultation.

SWiFT xxx: A rapidly developed recommendatory document based on the consensus of the participants of an NSAI workshop.

This document replaces/revises/consolidates the NSAI adoption of the document(s) indicated on the CEN/CENELEC cover/Foreword and the following National document(s):

NOTE: The date of any NSAI previous adoption may not match the date of its original CEN/CENELEC document.

This document is based on:

EN 60704-2-14:2013

Published:

2013-05-17

This document was published under the authority of the NSAI and comes into effect on:

2019-06-04

ICS number:

NOTE: If blank see CEN/CENELEC cover page

NSAI
1 Swift Square,
Northwood, Santry
Dublin 9

T +353 1 807 3800
F +353 1 807 3838
E standards@nsai.ie
W NSAI.ie

Sales:
T +353 1 857 6730
F +353 1 857 6729
W standards.ie

Údarás um Chaighdeáin Náisiúnta na hÉireann

National Foreword

I.S. EN 60704-2-14:2013&A11:2015&A1:2019 is the adopted Irish version of the European Document EN 60704-2-14:2013, Household and similar electrical appliances - Test code for the determination of airborne acoustical noise - Part 2-14: Particular requirements for refrigerators, frozen-food storage cabinets and food freezers

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

For relationships with other publications refer to the NSAI web store.

Compliance with this document does not of itself confer immunity from legal obligations.

In line with international standards practice the decimal point is shown as a comma (,) throughout this document.

This page is intentionally left blank

EUROPEAN STANDARD

EN 60704-2-14:2013/A1

NORME EUROPÉENNE

EUROPÄISCHE NORM

May 2019

ICS 17.140.20; 97.040.20

English Version

**Household and similar electrical appliances - Test code for the
determination of airborne acoustical noise - Part 2-14: Particular
requirements for refrigerators, frozen-food storage cabinets and
food freezers
(IEC 60704-2-14:2013/A1:2019)**

Appareils électrodomestiques et analogues - code d'essai
pour la détermination du bruit aérien - Partie 2-14:
Exigences particulières pour les réfrigérateurs,
conservateurs et congélateurs
(IEC 60704-2-14:2013/A1:2019)

Elektrische Geräte für den Hausgebrauch und ähnliche
Zwecke - Prüfvorschrift für die Bestimmung der
Luftschallemission - Teil 2-14: Besondere Anforderungen
an Kühlgeräte, Tiefkühlgeräte und Gefriergeräte
(IEC 60704-2-14:2013/A1:2019)

This amendment A1 modifies the European Standard EN 60704-2-14:2013; it was approved by CENELEC on 2019-05-03. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this amendment 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 amendment 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, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, 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

EN 60704-2-14:2013/A1:2019 (E)

European foreword

The text of document 59M/104/FDIS, future IEC 60704-2-14/A1, prepared by SC 59M "Performance of electrical household and similar cooling and freezing 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 60704-2-14:2013/A1:2019.

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) 2020-02-03
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2022-05-03

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 60704-2-14:2013/A1:2019 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 62552-1 | NOTE | Harmonized as EN 62552-1 ¹ |
| IEC 62552-2 | NOTE | Harmonized as EN 62552-2 ² |
| IEC 62552-3 | NOTE | Harmonized as EN 62552-3 ³ |

¹ Under preparation. Stage at time of publication: prEN 62552-1:2018.

² Under preparation. Stage at time of publication: prEN 62552-2:2018.

³ Under preparation. Stage at time of publication: prEN 62552-3:2018.

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 60704-2-14:2013/A11

January 2015

ICS 17.140.20; 97.040.20

English Version

Household and similar electrical appliances - Test code for the
determination of airborne acoustical noise -
Part 2-14: Particular requirements for refrigerators, frozen-food
storage cabinets and food freezers

Appareils électrodomestiques et analogues - code d'essai
pour la détermination du bruit aérien -
Partie 2-14: Exigences particulières pour les réfrigérateurs,
conservateurs et congélateurs

Elektrische Geräte für den Hausgebrauch und ähnliche
Zwecke - Prüfvorschrift für die Bestimmung der
Luftschallemission -
Teil 2-14: Besondere Anforderungen an Kühlgeräte,
Tiefkühlgeräte und Gefriergeräte

This amendment A11 modifies the European Standard EN 60704-2-14:2013; it was approved by CENELEC on 2014-12-01. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this amendment 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 amendment 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, Former Yugoslav Republic of Macedonia, 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.



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

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

Foreword

This document (EN 60704-2-14:2013/A11:2015) 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 (dop) 2015-12-01
be implemented at national level by
publication of an identical national
standard or by endorsement
- latest date by which the national standards (dow) 2017-12-01
conflicting with this
document have to be withdrawn

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.

This document has been prepared under a mandate given to CENELEC by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

For the relationship with EU Directive(s) see informative Annex ZZ, which is an integral part of this document.

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 60704-2-14

May 2013

ICS 17.140.20; 97.040.20

Supersedes EN 28960:1993

English version

**Household and similar electrical appliances -
Test code for the determination of airborne acoustical noise -
Part 2-14: Particular requirements for refrigerators, frozen-food storage
cabinets and food freezers
(IEC 60704-2-14:2013)**

Appareils électrodomestiques
et analogues - code d'essai pour la
détermination du bruit aérien -
Partie 2-14: Exigences particulières pour
les réfrigérateurs, conservateurs
et congélateurs
(CEI 60704-2-14:2013)

Elektrische Geräte für den Hausgebrauch
und ähnliche Zwecke -
Prüfvorschrift für die Bestimmung
der Luftschallemission -
Teil 2-14: Besondere Anforderungen an
Kühlgeräte, Tiefkühlgeräte und
Gefriergeräte
(IEC 60704-2-14:2013)

This European Standard was approved by CENELEC on 2013-03-06. 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, Former Yugoslav Republic of Macedonia, 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

Foreword

The text of document 59/590/FDIS, future edition 2 of IEC 60704-2-14, prepared by IEC/TC 59 "Performance of household and similar electrical appliances" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 60704-2-14:2013.

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) 2013-12-06
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2016-03-06

This document supersedes EN 28960:1993.

This Part 2 -14 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 refrigerators, frozen-food storage cabinets and food freezers.

This Part 2-14 supplements or modifies the corresponding clauses in EN 60704-1. When a particular subclause of Part 1 is not mentioned in this Part 2-14, 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 are to be adapted accordingly.

Subclauses, tables and figures that are numbered starting from 101 are additional to those in Part 1. 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.

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.

Endorsement notice

The text of the International Standard IEC 60704-2-14:2013 was approved by CENELEC as a European Standard without any modification.

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

| | | |
|-----------|------|-------------------------|
| IEC 62552 | NOTE | Harmonised as EN 62552. |
|-----------|------|-------------------------|



IEC 60704-2-14

Edition 2.0 2013-01

INTERNATIONAL STANDARD

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

**Part 2-14: Particular requirements for refrigerators, frozen-food storage cabinets
and food freezers**



THIS PUBLICATION IS COPYRIGHT PROTECTED
Copyright © 2013 IEC, Geneva, Switzerland

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either IEC or IEC's member National Committee in the country of the requester.
If you have any questions about IEC copyright or have an enquiry about obtaining additional rights to this publication, please contact the address below or your local IEC member National Committee for further information.

IEC Central Office
3, rue de Varembe
CH-1211 Geneva 20
Switzerland

Tel.: +41 22 919 02 11
Fax: +41 22 919 03 00
info@iec.ch
www.iec.ch

About the IEC

The International Electrotechnical Commission (IEC) is the leading global organization that prepares and publishes International Standards for all electrical, electronic and related technologies.

About IEC publications

The technical content of IEC publications is kept under constant review by the IEC. Please make sure that you have the latest edition, a corrigenda or an amendment might have been published.

Useful links:

IEC publications search - www.iec.ch/searchpub

The advanced search enables you to find IEC publications by a variety of criteria (reference number, text, technical committee,...).

It also gives information on projects, replaced and withdrawn publications.

IEC Just Published - webstore.iec.ch/justpublished

Stay up to date on all new IEC publications. Just Published details all new publications released. Available on-line and also once a month by email.

Electropedia - www.electropedia.org

The world's leading online dictionary of electronic and electrical terms containing more than 30 000 terms and definitions in English and French, with equivalent terms in additional languages. Also known as the International Electrotechnical Vocabulary (IEV) on-line.

Customer Service Centre - webstore.iec.ch/csc

If you wish to give us your feedback on this publication or need further assistance, please contact the Customer Service Centre: csc@iec.ch.



IEC 60704-2-14

Edition 2.0 2013-01

INTERNATIONAL STANDARD

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

**Part 2-14: Particular requirements for refrigerators, frozen-food storage cabinets
and food freezers**

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

PRICE CODE

N

ICS 17.140.20; 97.040.20

ISBN 978-2-83220-627-0

Warning! Make sure that you obtained this publication from an authorized distributor.

CONTENTS

| | |
|--|--------|
| FOREWORD..... | 3 |
| INTRODUCTION..... | 5 |
| 1 Scope and object..... | 6 |
| 1.1 Scope..... | 6 |
| 1.2 Object | 6 |
| 1.3 Measurement uncertainty | 6 |
| 1.101 Standard deviation for declaration and verification | 7 |
| 2 Normative references | 7 |
| 3 Terms and definitions | 7 |
| 4 Measurement methods and acoustical environments | 7 |
| 4.2 Direct method..... | 8 |
| 4.3 Comparison method | 8 |
| 5 Instrumentation | 8 |
| 6 Operation and location of appliances under test | 8 |
| 6.1 Equipping and pre-conditioning of appliances..... | 8 |
| 6.2 Supply of electrical energy and of water or gas | 9 |
| 6.3 Climatic conditions | 9 |
| 6.4 Loading and operating of appliances during test..... | 9 |
| 6.5 Location and mounting of appliances..... | 10 |
| 7 Measurement of sound pressure levels..... | 10 |
| 7.1 Microphone array, measurement surface and RSS location for essentially free-field conditions over reflecting plane(s) | 10 |
| 7.4 Measurements..... | 11 |
| 8 Calculation of sound pressure and sound power levels..... | 11 |
| 9 Information to be recorded..... | 11 |
| 10 Information to be reported | 11 |
| Annexes | 13 |
| Annex A (normative) Standard test table..... | 13 |
| Bibliography..... | 14 |
| Figure 101 – Measurement surface – parallelepiped – with key microphone positions for high floor-standing appliances placed against a wall..... | 12 |
| Table 101 – Standard deviations of sound power levels | 7 |
| Table 102 – Standard deviations for declaration and verification | 7 |

INTERNATIONAL ELECTROTECHNICAL COMMISSION

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

Part 2-14: Particular requirements for refrigerators, frozen-food storage cabinets and food freezers

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.
- 2) The formal decisions or agreements of IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National Committees.
- 3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
- 4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
- 5) IEC itself does not provide any attestation of conformity. Independent certification bodies provide conformity assessment services and, in some areas, access to IEC marks of conformity. IEC is not responsible for any services carried out by independent certification bodies.
- 6) All users should ensure that they have the latest edition of this publication.
- 7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
- 8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
- 9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 60704-2-14 has been prepared by IEC technical committee 59: Performance of household and similar electrical appliances.

This second edition cancels and replaces the first edition published in 2007. This edition constitutes a technical revision.

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

- a) the description of an appropriate test enclosure has been removed from this part of IEC 60704 and has been incorporated into Part 1 of IEC 60704-1;
- b) the values of standard deviations of sound power levels determined according to this part of IEC 60704 have been added.

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

| | |
|-------------|------------------|
| FDIS | Report on voting |
| 59/590/FDIS | 59/595/RVD |

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 2-14 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 refrigerators, frozen-food storage cabinets and food freezers.

This Part 2-14 supplements or modifies the corresponding clauses in IEC 60704-1. When a particular subclause of Part 1 is not mentioned in this Part 2-14, 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 are to be adapted accordingly.

Subclauses, tables and figures that are numbered starting from 101 are additional to those in Part 1. 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 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.

A bilingual version of this publication may be issued at a later date.

INTRODUCTION

The measuring conditions specified in this part of 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 household refrigerators, frozen-food storage cabinets and food freezers.

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 refrigerators, frozen-food storage cabinets and food freezers.

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 2-14: Particular requirements for refrigerators, frozen-food storage cabinets and food freezers

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 refrigerators, frozen-food storage cabinets and food freezers (fitted with their accessories) for household and similar use, supplied from the mains or from batteries.

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 refrigerators, frozen-food storage cabinets and food freezers.

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 refrigerator, frozen-food storage cabinet or food freezer under test fulfils the requirements specified in 1.3 of ISO 3743-1 and ISO 3743-2.

1.2 Object

Addition:

These described methods are specified for appliances without an operator present.

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:

The estimated values of standard deviations of sound power levels determined according to this standard are indicated in Table 101:

This is a free preview. Purchase the entire publication at the link below:

[Product Page](#)

-
- Looking for additional Standards? Visit Intertek Inform Infostore
 - Learn about LexConnect, All Jurisdictions, Standards referenced in Australian legislation
-