BS EN 62552-1:2020

BSI Standards Publication

Household refrigerating appliances — Characteristics and test methods

Part 1: General requirements

bsi.

National foreword

This British Standard is the UK implementation of EN 62552-1:2020. It is derived from IEC 62552-1:2015. Together with BS EN 62552-2:2020 and BS EN 62552-3:2020, it supersedes BS EN 62552:2013, which is withdrawn.

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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Amendments/corrigenda issued since publication

Date	Text affected

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 62552-1

April 2020

ICS 97.030

Supersedes EN 62552:2013 (partially) and all of its amendments and corrigenda (if any)

English Version

Household refrigerating appliances - Characteristics and test methods - Part 1: General requirements (IEC 62552-1:2015 , modified)

Appareils de réfrigération à usage ménager - Caractéristiques et méthodes d'essai - Partie 1: Exigences générales (IEC 62552-1:2015 , modifiée)

Haushaltskühlgeräte - Eigenschaften und Prüfverfahren - Teil 1: Allgemeine Anforderungen (IEC 62552-1:2015 , modifiziert)

This European Standard was approved by CENELEC on 2020-02-24. 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 62552-1:2020 E

EN 62552-1:2020 (E)

European foreword

This document (EN 62552-1:2020) consists of the text of IEC 62552-1:2015 prepared by IEC/TC 59 "Performance of household and similar electrical appliances", together with the common modifications 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)	2021-02-24
• latest date by which the national standards conflicting with this document have to be withdrawn	(dow)	2023-02-24

This standard in combination with standards EN 62552-2:2020 and EN 62552-3:2020 supersedes EN 62552:2013.

This standard shall be read in combination with standards EN 62552-2:2020 and EN 62552-3:2020.

EN 62552-1:2020 includes the following significant technical changes:

a) Chapter D.2. Location of sensor has been modified completely

b) Annex F Test report has been modified completely

c) New Annex ZA Final test report was added

Clauses, subclauses, notes, tables, figures and annexes which are additional to those in IEC 62552-1:2015 are prefixed “Z”.

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 Standardization Request M/459 given to CENELEC by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

Endorsement notice

The text of IEC 62552-1:2015 was approved by CENELEC as a European Standard with agreed common modifications.

Annex ZA
(informative)

Test report layout

No.:	Report - No.	Date:	dd/mm/yyyy	Type:	SomeFreezer SF1234
Test report - Household refrigeration appliance		**Testing Institute:** Science Lab Ltd. Anywhere Outnavillage Country		**Manufacturer:**	Man-U-Fact Ltd. Somewhere Inthecity Country
(Requirements from EN 62552:201x and xxxx/xx/EU)		**Approved by:**	Name Department	**Tested by:**	Name Department
			Signature		Signature

Supplier name:	Man-U-Fact Ltd.
Model identifier:	xyz1234

Low-noise appliance:	yes/no	**Efficiency class:**	A - G
Wine storage appliance:	yes/no	**Energy efficiency index EEI:**	12,3
Other refrigerating appliance:	yes/no	**Standard annual energy consumption [kWh/a]:**	12,34
Design type:	built-in/freestanding	**Climate class:**	SN-T
Number of external doors:	1	**Min. temperature*: [°C]**	10
Winter setting:	yes/no	**Max. temperature*: [°C]**	43
Fast freezer facility:	yes/no	**Combi parameter:**	1,230
Anti-condensation heater type:	manual on-off /ambient/other/none	**Load factor:**	1,2
		Door heat loss factor:	1,23

	H		W		D
Overall dimensions [mm]:	1234	x	1234	x	1234

All appliances	Decl.	Tested
Total volume [L]:	2345	2345

Wine coolers	Decl.	Tested
Bottle capacity [pcs]:	1234	1234
Temperature fluctuation test passed?		yes/no
Relative humidity test passed?		yes/no

Compart-ments	Type	Defrosting type [auto=A, manual=M]	Star rating	Volume [L]	Recommended temperature setting [°C]	Storage test passed?	
						High temp.	Low temp.
1	4-star	A/M/n.a.	4	123,4	≤ -18	yes/no	yes/no
2	3-star	A/M/n.a.	3	123,4	≤ -18	yes/no	yes/no
3	2-star	A/M/n.a.	2	123,4	≤ -12	yes/no	yes/no
4	1-star	A/M/n.a.	1	123,4	≤ -6	yes/no	yes/no
5	0-star/ice-making	A/M/n.a.	n.a.	123,4	≤ 0	yes/no	yes/no
6	Chill	A/M/n.a.	n.a.	123,4	-3 ≤ 3	yes/no	yes/no
7	Fresh food	A/M/n.a.	n.a.	123,4	0 ≤ +4	yes/no	yes/no
8	Wine storage	A/M/n.a.	n.a.	123,4	+5 ≤ +20	yes/no	yes/no
9	Cellar	A/M/n.a.	n.a.	123,4	+2 ≤ +14	yes/no	yes/no
10	Pantry	A/M/n.a.	n.a.	123,4	+14 ≤ +20	yes/no	yes/no
11	2-star section	A/M/n.a.	n.a.	123,4	≤ -12	yes/no	yes/no
12	Variable temperature compartment	A/M/n.a.	n.a.	124,4	-	yes/no	yes/no

Energy consumption 16°C ambient temperature	Tested
Incremental defrost energy consumption Δ E_{df} [Wh]:	1,20
Defrost and recovery interval Δ t_{df} [h]:	1,20
Energy consumption E_{16} [kWh/d]:	0,123

Other performance characteristics	Tested	Passed?
Temperature rise time [h]:	12	yes/no/n.a.
Freezing capacity [kg/24h]:	2,0	yes/no/n.a.
Noise emission [dB(A)]:	12,3	yes/no
Noise emission class:	A/B/C/D	yes/no
Ice-making capacity [kg/24h]:	n.a.	yes/no/n.a.

Energy consumption 32°C ambient temperature	Tested
Incremental defrost energy consumption Δ E_{df} [Wh]:	1,2
Defrost and recovery interval Δ t_{df} [h]:	1,2
Energy consumption E_{32} [kWh/d]:	1,234

Energy consumption 25°C ambient temperature (low noise appliances)	Tested
Incremental defrost energy consumption Δ E_{df} [Wh]:	12,34
Defrost and recovery interval Δ t_{df} [h]:	12,0
Energy consumption E_{25} [kWh/d]:	1,234

Circumvention	Case
Circumvention measures suspected?	yes/no
Tests carried out to evaluate possible circumvention devices?	yes/no

Auxiliary energy consumption [kWh/a]:	12,345

Tested ■ **Calculated** ■

	Tested	Passed?
Annual energy consumption AE [kWh/a]:	123	yes/no

* Minimum/Maximum ambient temperature [°C] for which the refrigerating appliance is suitable.

EN 62552-1:2020 (E)

Annex ZB
(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 Z1 When an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE Z2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: www.cenelec.eu.

Publication	Year	Title	EN/HD	Year
IEC 62552-2 (mod)	2015	Household refrigerating appliances - Characteristics and test methods – Part 2: Performance requirements	EN 62552-2	2020
IEC 62552-3 (mod)	2015	Household refrigerating appliances - Characteristics and test methods – Part 3: Energy consumption and volume	EN 62552-3	2020

EN 62552-1:2020 (E)

Annex ZZA
(informative)

Relationship between this European Standard and the ecodesign requirements of Commission Regulation (EU) 2019/2019 aimed to be covered

This European standard has been prepared under a Commission's standardisation request "Mandate to CEN, CENELEC and ETSI for Standardisation in the field of household refrigerating appliances", M/459 (2009) to provide one voluntary means of conforming to the ecodesign requirements of Commission Regulation (EU) 2019/2019 of 1.10.2019 laying down ecodesign requirements for refrigerating appliances pursuant to Directive 2009/125/EC of the European Parliament and of the Council and repealing Commission Regulation (EC) No 643/2009 [OJEU L315/187 of 5.12.2019].

Once this standard is cited in the Official Journal of the European Union under that Regulation, compliance with the normative clauses of this standard given in Table ZZA.1 confers, within the limits of the scope of this standard, a presumption of conformity with the corresponding ecodesign requirements of that Regulation and associated EFTA Regulations.

Table ZZA.1 – Correspondence between this European Standard and Commission Regulation (EU) 2019/2019 of 1.10.2019 laying down ecodesign requirements for refrigerating appliances pursuant to Directive 2009/125/EC of the European Parliament and of the Council and repealing Commission Regulation (EC) No 643/2009 [OJEU L315/187 of 5.12.2019] and Commission's standardisation request "Mandate to CEN, CENELEC and ETSI for Standardisation in the field of household refrigerating appliances", M/459 (2009)

Ecodesign requirements of Regulation No 2019/2019 [OJEU L315/187 of 5.12.2019]	Clause(s) / sub-clause(s) of this EN	Remarks/ Notes
Annex II, 2 c) Marking of compartments	Clause 5.2	Marking for frozen compartments
Annex II, 2 e) 2-star sub-compartments or 2-star sections	Clauses 3.3.16., 3.3.16.2, 3.3.16.4, 3.3.17	
Annex II, 2 f) 4-star compartments	Clause 3.3.16.4	

EN 62552-1:2020 (E)

Ecodesign requirements of Regulation No 2019/2019 [OJEU L315/187 of 5.12.2019]	Clause(s) / sub-clause(s) of this EN	Remarks/ Notes
Article 4.4 Variable temperature compartment	Clause 3.3.4 and Annex B.2.5.2	
Annex II.4(n) Climatic class classification	Clause 4	
Art 4.4, Annex II.1(a), Table 1 and (b), Table 2 Energy consumption determination for low noise refrigerator	Clause 3.1.Z11	

WARNING 1: Presumption of conformity stays valid only as long as a reference to this European Standard is maintained in the list published in the Official Journal of the European Union. Users of this standard should consult frequently the latest list published in the Official Journal of the European Union.

WARNING 2: Other Union legislation may be applicable to the products falling within the scope of this standard.

Annex ZZB
(informative)

Relationship between this European Standard and the energy labelling requirements of Commission Delegated Regulation (EU) 2019/2016 aimed to be covered

This European standard has been prepared under a Commission's standardisation request "Mandate to CEN, CENELEC and ETSI for Standardisation in the field of household refrigerating appliances", M/459 (2009) to provide one voluntary means of conforming to the energy labelling requirements of Commission Delegated Regulation (EU) 2019/2016 of 11.3.2019 supplementing Regulation (EU) 2017/1369 of the European Parliament and of the Council with regard to energy labelling of refrigerating appliances and repealing Commission Delegated Regulation (EU) No 1060/2010 [OJEU L315/102 of 5.12.2019].

Once this standard is cited in the Official Journal of the European Union under that Regulation, compliance with the normative clauses of this standard given in Table ZZB.1 confers, within the limits of the scope of this standard, a presumption of conformity with the corresponding energy labelling requirements of that Regulation and associated EFTA Regulations.

Table ZZB.1 – Correspondence between this European Standard and Commission Delegated Regulation (EU) 2019/2016 of 11.3.2019 supplementing Regulation (EU) 2017/1369 of the European Parliament and of the Council with regard to energy labelling of refrigerating appliances and repealing Commission Delegated Regulation (EU) No 1060/2010 [OJEU L315/102 of 5.12.2019] and Commission's standardisation request "Mandate to CEN, CENELEC and ETSI for Standardisation in the field of household refrigerating appliances", M/459 (2009)

Energy labelling **Requirements of Regulation No 2019/2016** **[OJEU L315/102 of 5.12.2019]**	**Clause(s) / sub-clause(s) of this EN**	**Remarks/ Notes**
Annex V, Table 6 (compartment parameters); Annex VI, Table 7 (compartment specifications) Variable temperature compartment	Clause 3.3.4 Annex B.2.5.2	
Annex V, Table 6 (general product parameters) Climate class classification	Clause 4	
Annex III, 1.2, VI.; Annex V, Table 6 (general product parameters); Annex VI, Table 7 (General product specifications) Energy consumption for low noise refrigerator	Clause 3.1.Z11	

WARNING 1: Presumption of conformity stays valid only as long as a reference to this European Standard is maintained in the list published in the Official Journal of the European Union. Users of this standard should consult frequently the latest list published in the Official Journal of the European Union.

WARNING 2: Other Union legislation may be applicable to the products falling within the scope of this standard.

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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HOUSEHOLD REFRIGERATING APPLIANCES – CHARACTERISTICS AND TEST METHODS –

Part 1: General requirements

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 62552-1 has been prepared by subcommittee 59M: Performance of electrical household and similar cooling and freezing appliances, of IEC technical committee 59: Performance of household and similar electrical appliances.

IEC 62552-1, -2 and -3 cancel and replace the first edition of IEC 62552 published in 2007. IEC 62552-1, -2 and -3 constitute a technical revision and includes the following significant technical changes with respect to IEC 62552:2007:

a) All parts of the standard have been largely rewritten and updated to cope with new testing requirements, new product configurations, the advent of electronic product controls and computer based test-room data collection and processing equipment.
b) In Part 1 (this part) there are some changes to test room equipment specifications and the setup for testing to provide additional flexibility especially when testing multiple appliances in a single test room.
c) For more efficient analysis and to better characterise the key product characteristics under different operating conditions, the test data from many of the energy tests in Part 3 is now

split into components (such as steady state operation and defrost and recovery). The approach to determination of energy consumption has been completely revised, with many internal checks now included to ensure that data complying with the requirements of the standard is as accurate as possible and of high quality.

d) Part 3 now provides a method to quantify each of the relevant energy components and approaches on how these can be combined to estimate energy under different conditions on the expectation that different regions will select components and weightings that are most applicable when setting both their local performance and energy efficiency criteria while using a single set of global test measurements.

e) For energy consumption measurements in Part 3, no thermal mass (test packages) is included in any compartment and compartment temperatures are based on the average of air temperature sensors (compared to the temperature in the warmest test package). There are also significant differences in the position of temperature sensors in unfrozen compartments.

f) The energy consumption test in Part 3 now has two specified ambient temperatures (16°C and 32°C).

g) While, in Part 2 test packages are still used for the storage test to confirm performance in different operating conditions, in Part 1 they have been standardised to one size (100 mm × 100 mm × 50 mm) to simply loading and reduce test variability. A clearance of at least 15 mm is now specified between test packages and the compartment liner.

h) A load processing energy efficiency test has been added in Part 3.

i) A tank-type ice making energy efficiency test has been added in Part 3.

j) A cooling capacity test has been added in Part 2.

k) A pull-down test has been added in Part 2.

l) Shelf area and storage volume measurement methods are no longer included. In Part 3 the volume measurement has been revised to be the total internal volume with only components necessary for the satisfactory operation of the refrigeration system considered as being in place.

m) Tests (both performance (Part 2) and energy (Part 3)) have been added for wine storage appliances.

The following print types are used in this international standard:

– requirements: in roman type;

– test variables: in *italic type*;

– notes: in small roman type.

– words in **bold** are defined in Clause 3.

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

FDIS	Report on voting
59M/61/FDIS	59M/64/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.

A list of all parts in the IEC 62252 series, published under the general title *Household refrigerating appliances – characteristics and test methods*, 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.

INTRODUCTION

IEC 62552 is split into 3 parts as follows:

- Part 1: Scope, definitions, instrumentation, test room and set up of refrigerating products (this part);
- Part 2: General performance requirements for **refrigerating appliances** and methods for testing them;
- Part 3: **Energy consumption** and **volume** determination.

NOTE For the safety requirements applicable to household **refrigerating appliances**, see IEC 60335-2-24; for noise requirements applicable to household **refrigerators** and **freezers**, see IEC 60704-2-14.

〖C〉 This standard was developed in relationship with Regulations (EU) 2019/2016 of 11.3.2019 on energy labelling and (EU) 2019/2019 of 1.10.2019 on ecodesign for refrigerating appliances. 〈C〗

HOUSEHOLD REFRIGERATING APPLIANCES – CHARACTERISTICS AND TEST METHODS –

Part 1: General requirements

1 Scope

〖C〗 This part of EN 62552 specifies the essential characteristics of household and similar **refrigerating appliances** cooled by internal natural convection or forced air circulation, and establishes test methods for checking these characteristics. 〈C〗

For the purposes of declaration, the tests defined in this part of IEC 62552 are considered to be type tests to assess the fundamental design and operation of a **refrigerating appliance**. This part of IEC 62552 does not define requirements for production sampling or conformity assessment or certification.

This part of IEC 62552 does not define a regime for verification testing as this varies by region and country. When verification of the performance of a **refrigerating appliance** of a given type in relation to this standard is necessary, it is preferable, wherever practicable, that all the tests specified be applied to a single unit. The tests can also be made individually for the study of a particular characteristic.

2 Normative references

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.

IEC 62552-2:2015, *Household refrigerating appliances – Characteristics and test methods – Part 2: Performance requirements*

IEC 62552-3:2015, *Household refrigerating appliances – Characteristics and test methods – Part 3: Energy consumption and volume*

3 Terms, definitions and symbols

For the purposes of this document, the following terms, definitions and symbols apply.

3.1 General terms and definitions

3.1.1
refrigerating appliance
insulated cabinet with one or more **compartments** that are controlled at specific temperatures and are of suitable size and equipped for household use, cooled by natural convection or a forced convection system whereby the cooling is obtained by one or more energy-consuming means

Note 1 to entry: From the point of view of installation, there are various types of household **refrigerating appliances** (free-standing, portable, wall-mounted, built-in, etc.).