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BSI Standards Publication

## Household electric cooking appliances

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Part 1: Ranges, ovens, steam ovens and grills — Methods for measuring performance (IEC 60350-1:2016, modified)

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## National foreword

This British Standard is the UK implementation of EN 60350-1:2016. It is derived from IEC 60350-1:2016. It supersedes BS EN 60350-1:2013 +A11:2014, which is withdrawn.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.**

This British Standard was published under the authority of the Standards Policy and Strategy Committee on 31 December 2016.

### Amendments/corrigenda issued since publication

Date	Text affected
31 January 2018	Missing excel spreadsheet added

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## EUROPÄISCHE NORM

November 2016

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English Version

## Household electric cooking appliances - Part 1: Ranges, ovens, steam ovens and grills - Methods for measuring Performance (IEC 60350-1:2016 , modified)

Appareils de cuisson électrodomestiques - Partie 1:  
Cuisinières, fours, fours à vapeur et grills - Méthodes de  
mesure de l'aptitude à la fonction  
(IEC 60350-1:2016 , modifiée)

Elektrische Kochgeräte für den Hausgebrauch - Teil 1:  
Herde, Backöfen, Dampfgarer und Grills - Verfahren zur  
Messung der Gebrauchseigenschaften  
(IEC 60350-1:2016 , modifiziert)

This European Standard was approved by CENELEC on 2016-06-03. 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.



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**

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The text of document 59K/263/CDV, future edition 2 of IEC 60350-1, prepared by SC 59K "Performance of household and similar electrical cooking 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 60350-1:2016.

A draft amendment, which covers common modifications to IEC 60350-1 (59K/263/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 the document has to be (dop) 2017-05-04  
implemented at national level by  
publication of an identical  
national standard or by endorsement
- latest date by which the national (dow) 2019-11-04  
standards conflicting with the document  
have to be withdrawn

This document supersedes EN 60350-1:2013.

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.

Clauses, subclauses, notes, tables, figures and annexes which are additional to those in IEC 60350-1:2016 are prefixed "Z".

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 Regulations.

For the relationship with EU Regulations see informative Annex ZZA, Annex ZZB and Annex ZZC which are integral parts of this document.

### **Endorsement notice**

The text of the International Standard IEC 60350-1:2016 was approved by CENELEC as a European Standard with agreed common modifications.

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(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 1 When 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](http://www.cenelec.eu)

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60584-2	1982	Thermocouples - Part 2: Tolerances	EN 60584-2	1993
IEC 62301	-	Household electrical appliances - Measurement of standby power	EN 50564	-
ISO 80000-1	2009	Quantities and units - Part 1: General	EN ISO 80000-1	2013
CIE 15.2		Colorimetry	-	-

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(informative)

### **Relationship between this European Standard and the energy labelling requirements of Commission Delegated Regulation (EU) No 65/2014 aimed to be covered**

This European standard has been prepared under a Commission's standardization request M/495 Standardization mandate to CEN, CENELEC and ETSI under Directive 2009/125/EC relating to harmonized standards in the field of Ecodesign to provide one voluntary means of conforming to the energy labelling requirements of Commission Delegated Regulation (EU) No 65/2014 of 1 October 2013 supplementing Directive 2010/30/EU of the European Parliament and of the Council with regard to the energy labelling of domestic ovens and range hoods [OJ L 29/1, 31.01.2014].

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 energy labelling requirements of that Regulation and associated EFTA Regulations.

**Table ZZA.1 — Correspondence between this European Standard and Commission Delegated Regulation (EU) No 65/2014 of 1 October 2013 supplementing Directive 2010/30/EU of the European Parliament and of the Council with regard to energy labelling of domestic ovens and range hoods [OJ L 29/1, 31.01.2014] and Commission's standardisation request M/495 Standardization mandate to CEN, CENELEC and ETSI under Directive 2009/125/EC relating to harmonized standards in the field of Ecodesign**

<b>Energy labelling requirements of Regulation No 65/2014 [OJ L 29/1, 31.01.2014]</b>	<b>Clause(s) / sub-clause(s) of this EN</b>	<b>Remarks / Notes</b>
General description of the appliance model; number of cavities; heat source(s) per cavity; the heating function(s) (conventional and/or the forced air convection) per cavity	1 Scope 2 Normative references 3 Terms and definitions 6.8 Mass of the appliances	
Determining the volume of the cavity of the domestic oven in litres	6.2 Usable internal dimensions and calculated volume of ovens	
Measuring the energy consumption of a cavity of a domestic oven for one standardised cycle by heating a standardised load soaked with water (conventional and if available the forced air convection)	5 General conditions for the measurement 7.1 General 7.4 Energy consumption and time for heating a load C.7 Brick for testing energy consumption of ovens Annex D Description of the test brick	
Verifying that the temperature inside the oven cavity reaches the temperature setting of the thermostat and/or the oven control display within the duration of the test cycle	7.4.3.2 Checking the oven temperature Annex I Marking the temperature setting for checking the oven temperature	
copy of the calculation and the results of the calculations	Annex E Data and calculation sheet: Energy consumption for heating a load	

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

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(informative)

### Relationship between this European Standard and the ecodesign requirements of Commission Regulation (EU) No 66/2014 aimed to be covered

This European Standard has been prepared under a Commission's standardization request M/495 Standardization mandate to CEN, CENELEC and ETSI under Directive 2009/125/EC relating to harmonized standards in the field of Ecodesign to provide one voluntary means of conforming to the ecodesign requirements of Commission Regulation (EU) No 66/2014 of 14 January 2014 implementing Directive 2009/125/EC of the European Parliament and of the Council with regard to ecodesign requirements for domestic ovens, hobs and range hoods [OJ L 29/33, 31.01.2014].

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 ecodesign requirements of that Regulation and associated EFTA Regulations.

**Table ZZB.1 — Correspondence between this European Standard and Commission Regulation (EU) No 66/2014 of 14 January 2014 implementing Directive 2009/125/EC of the European Parliament and of the Council with regard to ecodesign requirements for domestic ovens, hobs and range hoods [OJ L 29/33, 31.01.2014] and Commission's standardization request M/495 Standardization mandate to CEN, CENELEC and ETSI under Directive 2009/125/EC relating to harmonized standards in the field of Ecodesign**

Ecodesign requirements of Regulation No 66/2014 [OJ L 29/33, 31.01.2014]	Clause(s) / sub-clause(s) of this EN	Remarks / Notes
General description of the appliance model; number of cavities; heat source(s) per cavity; the heating function(s) (conventional and/or the forced air convection) per cavity.	1 Scope 2 Normative references 3 Terms and definitions 6.8 Mass of the appliances	
Determining the volume of the cavity of the domestic oven in litres.	6.2 Usable internal dimensions and calculated volume of ovens	
Measuring the energy consumption of a cavity of a domestic oven for one standardized cycle by heating a standardized load soaked with water (conventional and if available the forced air convection).	5 General conditions for the measurement 7.1 General 7.4 Energy consumption and time for heating a load C.7 Brick for testing energy consumption of ovens Annex D Description of the test brick	
Verifying that the temperature inside the oven cavity reaches the temperature setting of the thermostat and/or the oven control display within the duration of the test cycle.	7.4.3.2 Checking the oven temperature Annex I Marking the temperature setting for checking the oven temperature	



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results of the calculations.	sheet: Energy consumption for heating a load	
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(informative)

### Relationship between this European Standard and the ecodesign requirements of Commission Regulation (EC) No 1275/2008 aimed to be covered

This European Standard has been prepared under a Commission's standardization request M/439 Mandate to CEN, CENELEC and ETSI for standardization in the field of standby and off modes power consumption measurement for energy using products (EuPs) to provide one voluntary means of conforming to the ecodesign requirements of Commission Regulation (EC) No 1275/2008 of 17 December 2008 implementing Directive 2005/32/EC of the European Parliament and of the Council with regard to ecodesign requirements for standby and off mode electric power consumption of electrical and electronic household and office equipment [OJ L 339, 18.12.2008].

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 ZZC.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 ZZC.1 – Correspondence between this European Standard and Commission Regulation (EC) No 1275/2008 of 17 December 2008 implementing Directive 2005/32/EC of the European Parliament and of the Council with regard to ecodesign requirements for standby and off mode electric power consumption of electrical and electronic household and office equipment [OJ L 339, 18.12.2008] and Commission's standardization request M/439 Mandate to CEN, CENELEC and ETSI for standardization in the field of standby and off modes power consumption measurement for energy using products (EuPs)**

<b>Ecodesign requirements of Regulation (EC) No 1275/2008 [OJ L 339, 18.12.2008]</b>	<b>Clause(s) and subclause(s) of this EN</b>	<b>Remarks / Notes</b>
Power consumption requirements for standby- and off-mode	12 Consumption measurement of low power modes (additional requirements for the measurement of low power modes )	

**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

### HOUSEHOLD ELECTRIC COOKING APPLIANCES –

#### Part 1: Ranges, ovens, steam ovens and grills – Methods for measuring performance

#### 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 60350-1 has been prepared by subcommittee 59K: Performance of household and similar electrical cooking appliances, of IEC technical committee 59: Performance of household and similar electrical appliances.

This second edition cancels and replaces the first edition published in 2011. This edition constitutes a technical revision.

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

- new definitions for "**set to off mode**" and "**set to standby mode**" are included in Clause 3;
- reference to ISO 80000 regarding rounding;
- more exact determination of the mass of the appliances (6.2);
- update of the existing 7.3 in order to improve the clarity of procedure;

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- additional temperature requirement in 7.4.3 to ensure an adequate temperature setting during the energy measurement process;
- editorial changes in 7.6.1.3, 7.6.2.1, 7.6.2.2 and 7.6.2.3;
- revision of Clause 8 in order to increase the repeatability for the measurements for steam ovens;
- Clause 12 "Standby power" is renamed to "Consumption measurement of low power modes" and the content is adapted for IEC 62301:2011;
- replacing the supplier for the colouring measurement device in Clause C.6, because the previous device is no longer available;
- adaptation of Annex A to the new supplier of colouring measurement devices;
- adaptation of Annex E;
- measurement method for measuring the consumption of the **cooling down period** is added in the informative, new Annex G;
- measurement method to check applied microwave energy during the measurement according to 7.4 is added in the informative Annex H;
- new Annex I for marking the temperature setting for checking the oven temperature.

This publication contains an attached file in the form of an Excel 97 file. This file is intended to be used as a complement and does not form an integral part of the publication.

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

FDIS	Report on voting
59K/273/FDIS	59K/277/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.

Words in **bold** in the text are specifically defined in Clause 3.

A list of all parts in the IEC 60350 series, published under the general title *Household electric cooking appliances*, 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.

**IMPORTANT – The “colour inside” logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this publication using a colour printer.**



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## HOUSEHOLD ELECTRIC COOKING APPLIANCES –

### Part 1: Ranges, ovens, steam ovens and grills – Methods for measuring performance

#### 1 Scope

This part of IEC 60350 specifies methods for measuring the performance of electric **cooking ranges, ovens, steam ovens, and grills** for household use.

The **ovens** covered by this standard may be with or without microwave function.

Manufacturers should define the primary cooking function of the appliance – microwave function or thermal heat. The primary cooking function should be measured with an existing method according to energy consumption. If the primary cooking function is declared in the instruction manual as a microwave function, IEC 60705 is applied for energy consumption measurement. If the primary cooking function is declared as a thermal heat, then IEC 60350-1 is applied for energy consumption measurement.

If the primary function is not declared by the manufacturer, the performance of the microwave function and thermal heat should be measured as far as it is possible.

NOTE 1 For measurement of energy consumption and time for heating a load (see 7.4), this standard is furthermore not applicable to:

- microwave combination function;
- ovens with reciprocating trays or turntable;
- small cavity ovens;
- ovens without adjustable temperature control;
- heating functions other than defined in 3.12 to 3.14;
- appliances with only solo **steam function** (3.15).

NOTE 2 This standard does not apply to

- microwave ovens (IEC 60705),
- portable appliances for cooking, grilling, steaming and similar functions (IEC 61817).

This standard defines the main performance characteristics of these appliances which are of interest to the user and specifies methods for measuring these characteristics.

This standard does not specify a classification or ranking for performance.

NOTE 3 Some of the tests which are specified in this standard are not considered to be reproducible since the results may vary between laboratories. They are therefore intended for comparative testing purposes only.

NOTE 4 This standard does not deal with safety requirements (IEC 60335-2-6 and IEC 60335-2-9).

NOTE 5 Appliances covered by this standard may be built-in or for placing on a working surface or the floor.

NOTE 6 There is no measurement method for the energy consumption for grilling and **steam functions** available.

#### 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.