

# INTERNATIONAL STANDARD

## NORME INTERNATIONALE



**Household electric cooking appliances –  
Part 1: Ranges, ovens, steam ovens and grills – Methods for measuring  
performance**

**Appareils de cuisson électrodomestiques –  
Partie 1: Cuisinières, fours, fours à vapeur et grils – Méthodes de mesure de  
l'aptitude à la fonction**



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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

### IEC 60350-1 Edition 2.0 2016-04

#### HOUSEHOLD ELECTRIC COOKING APPLIANCES –

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

### INTERPRETATION SHEET 1

This interpretation sheet 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.

The text of this interpretation sheet is based on the following documents:

DISH	Report on voting
59K/322/DISH	59K/325/RVDISH

Full information on the voting for the approval of this interpretation sheet can be found in the report on voting indicated in the above table.

#### SC 59K interpretation sheet on: Volume measurement in IEC 60350-1:2016

##### Rationale

When measuring the oven volume in accordance with IEC 60350-1:2016, 6.2, the wording in the standard leaves room for interpretation as to how to proceed with side grids in the oven. In many regions, the volume is used to calculate an energy efficiency index, which always raises the question as to what extent the measurement with and without side grids leads to different statements on energy efficiency.

This document clarifies how to interpret 6.2 of IEC 60350-1:2016 in order to achieve a clearer approach.

### Question

According to IEC 60350-1:2016, 6.2, removable items, e.g. the side grids, shall be removed to measure the volume if this is indicated in the user manual. The question that arises is to ascertain when this condition is met, and when the measurement is performed without side grids.

### Answer

The usable width of the oven is measured in accordance with 6.2.3 from the left side wall of the cavity to the right side wall of the cavity. In accordance with 6.2.1, parts, such as side grids, shall be removed before the measurement if they are removable and if they are not necessary for any intended operation, in accordance with the user manual.

As a result, side grids shall be removed if:

- 1) the user manual describes the removal of side grids (the extent of the description and the assignment to a chapter is not defined);
- 2) the user manual describes any application for which the removable parts are not required (= intended operation). This is the case when an application on the bottom of the cavity without the use of side grids is given as an example. The number of applications as well as the type of application (heating type, temperature, minor relevance, preheated operation) are not specified in 6.2.1 and are, therefore, irrelevant.

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

## HOUSEHOLD ELECTRIC COOKING APPLIANCES –

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

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**IEC 60350-1 edition 2.1 contains the second edition (2016-04) [documents 59K/273/FDIS and 59K/277/RVD], its interpretation sheet 1 (2021-03) and its amendment 1 (2021-05) [documents 59K/328/FDIS and 59K/331/RVD].**

**In this Redline version, a vertical line in the margin shows where the technical content is modified by amendment 1. Additions are in green text, deletions are in strikethrough red text. A separate Final version with all changes accepted is available in this publication.**

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 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;
- 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.

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.

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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.

NOTE 3 This document is also applicable to portable appliances with similar functionalities that were previously covered by the withdrawn IEC 61817.

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.

IEC 60584-2, *Thermocouples – Part 2: Tolerances*

IEC 62301, *Household electrical appliances – Measurement of standby power*

ISO 80000-1:2009, *Quantities and units – Part 1: General*

CIE 15, *Colorimetry*

## 3 Terms and definitions

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

### 3.1

#### **cooking range**

appliance having a **hob** and at least one **oven** and which may incorporate a **grill**

### 3.2

#### **hob**

appliance or part of an appliance which incorporates one or more **cooking zones** and/or **cooking areas** including a **control** unit

Note 1 to entry: A **hob** is also known as a cooktop.

Note 2 to entry: The **control** unit can be included in the **hob** itself or integrated in a **cooking range**.

### 3.3

#### **oven**

appliance or compartment of a **cooking range** in which food is cooked by radiation, by natural convection, by forced-air circulation or by a combination of these heating methods

### 3.4

#### **pyrolytic self-cleaning oven**

**oven** in which cooking deposits are removed by heating the **oven** to a sufficiently high temperature

### 3.5

#### **steam oven**

appliance or compartment of a **cooking range** in which food is cooked mainly by steam condensation at ambient pressure

Note 1 to entry: Appliances are fitted with their own steam generator.

Note 2 to entry: Steam does not mean the evaporated water from the food.

### 3.6

#### **combi steam oven**

appliance or compartment of a **cooking range** in which food is cooked by a combination of **oven** (3.3) and **steam oven** (3.5)

Note 1 to entry: Appliances with only a steam assist function also exist. For these **ovens** the **steam function** can only be tested if this function is described in the manual instruction or if the appliance provides a setting for **steam function**.