

INTERNATIONAL STANDARD

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**Household electric cooking appliances –
Part 2: Hobs – Methods for measuring performance**

**Appareils de cuisson électrodomestiques –
Partie 2: Tables de cuisson – Méthodes de mesure de l'aptitude à la fonction**

<https://standards.iteh.ai/catalog/standards/sist/28611311-980c-4563-a8d6-fe8c305082d2/iec-60350-2-2017>



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INTERNATIONAL ELECTROTECHNICAL COMMISSION

HOUSEHOLD ELECTRIC COOKING APPLIANCES –**Part 2: Hobs – Methods for measuring performance****FOREWORD**

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This consolidated version of the official IEC Standard and its amendment has been prepared for user convenience.

IEC 60350-2 edition 2.1 contains the second edition (2017-08) [documents 59K/293/FDIS and 59K/294/RVD] and its amendment 1 (2021-05) [documents 59K/329/FDIS and 59K/332/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 60350-2 has been prepared by subcommittee 59K: Performance of household and similar electrical cooking appliances, of IEC technical committee TC 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:

- a) terms and definitions revised and new definitions added (see 3);
- b) following the new market trend, requirements related to so-called flexible and free induction zones – in this document named as **cooking areas** – are added;
- c) specification for standardized and alternative cookware is introduced (see 5.6);
- d) measurement procedure reflecting a household-like cooking process for measuring the energy consumption is introduced (see Clause 7 and Annex A);
- e) revision of measurement procedure for determining the accuracy of control (see Clause 8);
- f) new reproducible measurement procedure for assessing the heat distribution (see Clause 9);
- g) additional requirements (according to IEC 62301:2011) on how to measure low-power modes.

In this document, terms in bold characters are defined in Clause 3.

This standard contains attached files in the form of a spreadsheet. These files are intended to be used as a complement and do not form an integral part of the standard.

The French version of this standard has not been voted upon.

This document has been drafted in accordance with the ISO/IEC Directives, Part 2.

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 the base publication and its amendment 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,
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HOUSEHOLD ELECTRIC COOKING APPLIANCES –

Part 2: Hobs – Methods for measuring performance

1 Scope

This part of IEC 60350 defines methods for measuring the performance of electric **hobs** for household use.

Appliances covered by this document can be built-in or designed to be placed on a work surface. The **hob** can also be a part of a cooking range.

~~This document does not apply to portable appliances for cooking, grilling and similar functions (see IEC 61817).~~

This document defines the main performance characteristics of **hobs** which are of interest to the user and specifies methods for measuring these characteristics.

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

NOTE 1 Some of the tests which are specified in this document are not considered to be reproducible since the results can vary between laboratories. They are therefore intended for comparative testing purposes only.

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

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

2 Normative references

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.

IEC 62301:2011, *Household electrical appliances – Measurement of standby power*

IEC 60364-5-54, *Low-voltage electrical installations – Part 5-54: Selection and erection of electrical equipment – Earthing arrangements and protective conductors*

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

3 Terms and definitions

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

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <http://www.iso.org/obp>

3.1

cooking range

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

Note 1 to entry: Methods for measuring performance of ovens are described in IEC 60350-1.

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

cooking zone

limitative marking on the surface of a hob where one cookware is placed and heated or an attached area to the surface

EXAMPLE

A **cooking zone** can be:

- a **single zone** or a **multiple zone** (see 3.4 and 3.5);
- a **solid hotplate** (see 3.6);
- a **tubular hotplate** (see 3.7);
- a **radiant cooking zone** (see 3.8);
- an **induction cooking zone** (see 3.9).

Note 1 to entry: **Cooking zones** which are used without cookware but by positioning the food directly on the surface are not included.

Note 2 to entry: Sometimes there is a decoration symbol, e.g. a cross, to mark the centre of the **cooking zone** additionally.

3.4

single zone

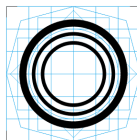
cooking zone marked for one cookware size

3.5

multiple zone

cooking zone marked for more than one cookware size and shape which can be circular, elliptical or a combination

EXAMPLE 1 Circular **multiple zone** for three different cookware sizes:



[IEC 60417-Pr17-001]

EXAMPLE 2 Circular and elliptical **multiple zone**:



[IEC 60417-5492:2002-10]

3.6

solid hotplate

cooking zone having a closed surface, which is usually constructed from cast iron, with an integrated heating element

3.7

tubular hotplate

cooking zone having a surface which is formed by the configuration of a tubular heated heating element in a substantially flat plane

3.8

radiant cooking zone

cooking zone on which the pan is heated by means of a radiant heating element below the glass ceramic which could have a heating ribbon, heating spiral or a tungsten wire which is located in a quartz glass bulb or combination of these

3.9

induction cooking zone

cooking zone on which the pan is heated by means of an induction element below the glass ceramic or similar where the eddy currents are inducted in the bottom of the pan by a magnetic field

3.10

cooking area without limitative markings

area where cookware is placed and heated by an inducted magnetic field without limitative markings

EXAMPLE See Figure A.1

Note 1 to entry: **Cooking areas** which are used without cookware but by positioning the food directly on the surface are not included.

Note 2 to entry: Sometimes there are one or more decoration symbols, e.g. a cross, on the **cooking area** to mark the centre position where the cookware is placed.

3.11

cooking area with limitative markings

area where cookware is placed and heated by an inducted magnetic field where the area is marked to show the limits where more than one cookware can be used simultaneously while the cookware pieces can be used and controlled separately from each other at the same time

EXAMPLE See Figure A.2

Note 1 to entry: **Cooking areas** which are used without cookware but by positioning the food directly on the surface are not included.

Note 2 to entry: The **cooking area** is also used combined for one cookware, even if there is more than one control.

3.12

control

part of the **hob** for adjusting the power or temperature respectively of a **cooking zone** or a **cooking area** for one piece of cookware, independent from technical solution (e.g. knobs, touch controls etc.)

Note 1 to entry: The power is generally indicated as numbers, but also temperature values and symbols are possible.

Note 2 to entry: **Controls** integrated outside of the hob in a separate device or as part of a built-in-oven are also included.

3.13

warming zone

area used for keeping food warm usually not used for cooking

Note 1 to entry: Normally one power setting exists – on and off.

3.14

maximum power

maximum possible power setting while only one cookware is used

Note 1 to entry: Boost function is considered.

3.15

standardized cookware

cookware that is in accordance with the specification of 5.6.1

3.16

alternative cookware

commercially available cookware that is in accordance with the requirements given in 5.6.2

3.17

set to off mode

action where the product is switched off using appliance **controls** or switches that are accessible and intended for operation by the user during normal use to attain the lowest power consumption that may persist for an indefinite time while connected to a main power source and used in accordance with the manufacturer's instructions

Note 1 to entry: All actions required to set to off mode like for example remove the cookware etc are considered.

Note 2 to entry: For definition of off mode IEC 62301 is relevant.

3.18

set to standby mode

action where the product is switched to standby using appliance **controls** or switches that are accessible and intended for operation by the user during normal use to attain the lowest power consumption that may persist for an indefinite time while connected to a main power source and used in accordance with the manufacturer's instructions

Note 1 to entry: For definition of standby mode IEC 62301 is relevant.

3.19

open loop control

mode of operation in which the value of the power output is set at a desired value, without taking into account the difference between the actual and desired values

EXAMPLE A cooking zone with an electronic, electromechanical, or mechanical control of the power input, which is controlled independently of the actual temperature in the cookware.

[SOURCE: IEC 60050-314:2001, 314-05-02, modified – In the term itself, "stabilization" has been replaced by "control"; in the definition, "output" has been replaced by "power output", the words "by external means" have been removed and the example has been added.]

3.20

closed loop control

mode of operation in which the value of the output is influenced by comparing of a reference value by the measured value and using the difference between those values, directly or indirectly, to maintain the output quantity at the desired value with a given uncertainty

EXAMPLE The value can be a measured temperature at the cookware or under the glass ceramic.