



SLOVENSKI STANDARD SIST EN 60350:2001

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Electric cooking ranges, hobs, ovens and grills for household use - Methods for measuring performance

Electric cooking ranges, hobs, ovens and grills for household use - Methods for measuring performance

Elektrische Herde, Kochmulden, Backöfen und Grillgeräte für den Hausgebrauch - Verfahren zur Messung der Gebrauchseigenschaften

Cuisinières, foyers de cuisson, fours électriques et grils à usage domestique - Méthodes de mesure de l'aptitude à la fonction

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SIST EN 60350:2001

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 60350

May 1999

ICS 97.040.20

Supersedes HD 376 S2:1984

English version

**Electric cooking ranges, hobs, ovens and grills for household use
Methods for measuring performance
(IEC 60350:1999)**

Cuisinières, foyers de cuisson, fours
électriques et grils à usage domestique
Méthodes de mesure de l'aptitude à la
fonction
(CEI 60350:1999)

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CENELEC

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

Central Secretariat: rue de Stassart 35, B - 1050 Brussels

Foreword

The text of document 59B/67/FDIS, future edition 2 of IEC 60350, prepared by SC 59B, Cooking ranges, working tables, ovens and similar appliances, of IEC TC 59, Performance of household electrical appliances, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 60350 on 1999-05-01.

This European Standard supersedes HD 376 S2:1984.

The following dates were fixed:

- latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2000-02-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 2002-05-01

Endorsement notice

The text of the International Standard IEC 60350:1999 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 60335-2-6 NOTE: Harmonized, together with its corrigendum March 1998, as EN 60335-2-6:1999 (modified). standards.iteh.ai/catalog/standards/sist/c9d67961-3174-4d98-8ce5-ce5b4d3c208f/sist-en-60350-2001
- IEC 60335-2-9 NOTE: Harmonized as EN 60335-2-9:1995 (not modified).
- IEC 60705 NOTE: Harmonized as EN 60705:1999 (not modified).

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Deuxième édition
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et grils à usage domestique –
Méthodes de mesure de l'aptitude à la fonction**

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Commission Electrotechnique Internationale
International Electrotechnical Commission
Международная Электротехническая Комиссия

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**ELECTRIC COOKING RANGES, HOBS, OVENS AND GRILLS
FOR HOUSEHOLD USE –
METHODS FOR MEASURING PERFORMANCE**

FOREWORD

- 1) The IEC (International Electrotechnical Commission) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of the 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, the IEC publishes International Standards. 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. The 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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- 6) Attention is drawn to the possibility that some of the elements of this International Standard may be the subject of patent rights. The IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 60350 has been prepared by subcommittee 59B: Cooking ranges, working tables, ovens and similar appliances, of IEC technical committee 59: Performance of household electrical appliances.

This second edition cancels and replaces the first edition published in 1971, and constitutes a technical revision.

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

FDIS	Report on voting
59B/67/FDIS	59B/68/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.

Annexes A and B form an integral part of this standard.

Annex C is for information only.

Words in **bold** in the text are defined in clause 3.

ELECTRIC COOKING RANGES, HOBS, OVENS AND GRILLS FOR HOUSEHOLD USE – METHODS FOR MEASURING PERFORMANCE

1 Scope

This International Standard defines methods for measuring the performance of electric **cooking ranges, hobs, ovens** and **grills** for household use.

NOTE 1 – Appliances covered by this standard may be built-in or for placing on a working surface or the floor.

NOTE 2 – This standard does not apply to

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

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

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.

This standard does not specify requirements for performance.

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

2 Normative references

[SIST EN 60350:2001](#)

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The following normative documents contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the edition indicated was valid. All normative documents are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent edition of the normative document indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 7724-1:1984, *Paints and varnishes – Colorimetry – Part 1: Principles*

ISO 7724-2:1984, *Paints and varnishes – Colorimetry – Part 2: Colour measurement*

ISO 7724-3:1984, *Paints and varnishes – Colorimetry – Part 3: Calculation of colour differences*

ISO/CIE 10526:1991, *CIE standard colorimetric illuminants*

ISO/CIE 10527:1991, *CIE standard colorimetric observers*

CIE 15.2:1986, *Colorimetry*

* IEC 61817, in preparation.

3 Definitions

For the purposes of this International Standard the following definitions apply.

3.1

cooking range

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

3.2

hob

appliance or part of an appliance which incorporates one or more **cooking zones**

NOTE – A hob is also known as a cooktop.

3.3

cooking zone

part of the **hob** or area marked on the surface of a **hob** on which pans are placed for heating

3.4

hotplate

part attached to the surface of a **hob** which forms a **cooking zone**

3.5

solid hotplate

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

3.6

tubular hotplate

hotplate having a surface which is formed by the configuration of a tubular sheathed heating element in a substantially flat plane

3.7

glass ceramic hob

hob in which the heating elements are located beneath a glass ceramic surface

3.8

induction cooking zone

cooking zone on which the pan is heated by means of eddy currents

NOTE 1 – The eddy currents are induced in the bottom of the pan by the electromagnetic field of a coil.

NOTE 2 – The hob surface may be of glass ceramic.

3.9

grill

appliance or part of an appliance in which food is cooked by radiant heat

3.10

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

3.11

pyrolytic self-cleaning oven

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

3.12

oven with catalytic cleaning

oven in which cooking deposits are removed by breaking them down on a special coating

3.13

warming compartment

separate compartment in which dishes are placed in order to preheat them prior to serving, or in which food is maintained at serving temperature

4 List of measurements

The performance of the appliance is determined by the tests listed in 4.1 to 4.6.

4.1 Dimensions and mass

The following measurements are carried out:

- overall dimensions (see 6.1);
- dimensions of **hotplates** and **cooking zones** (see 6.2);
- internal dimensions of **ovens** (see 6.3);
- dimensions of shelves (see 6.4);
- dimensions of **grill grids** (see 6.5);
- dimensions of **warming compartments** (see 6.6);
- level of **hotplates** (see 6.7);
- distance between the **hotplates** or **cooking zones** (see 6.8);
- level of the shelf (see 6.9);
- mass of the appliance (see 6.10).

4.2 Hotplates and cooking zones

The following tests are carried out:

- ability to heat water (see 7.1);
- ability to control the temperature of a load (see 7.2);
- heat distribution (see 7.3).

4.3 Oven

The following tests are carried out:

- preheating the empty oven (see 8.1);
- accuracy of the control (see 8.2);
- energy consumption (see 8.3);
- heat distribution (see 8.4);
- ability to supply heat (see 8.5).

4.4 Grill

The following tests are carried out:

- grilling area (see 9.1);
- grilling (see 9.2).

4.5 Warming compartments

The following test is carried out:

- temperature control and energy consumption (see clause 10).

4.6 Cleaning

The following tests are carried out:

- spillage capacity of hobs (see 11.1);
- cleaning of pyrolytic self-cleaning ovens (see 11.2);
- cleaning of ovens with catalytic cleaning (see 11.3).

5 General conditions for the measurements

Unless otherwise specified, the measurements are made under the following conditions.

5.1 Test room

The tests are carried out in a substantially draught-free room in which the ambient temperature is maintained at $20\text{ °C} \pm 5\text{ °C}$.

5.2 Voltage

The appliance is supplied at rated voltage, $\pm 1\%$.

If the appliance has a rated voltage range, the tests are carried out at the nominal voltage of the country where the appliance is intended to be used.

5.3 Instrumentation

The temperature measuring instrument including thermocouples shall have an accuracy of 0,5 K within the temperature range of 0 °C to 100 °C and an accuracy of 2 K within the temperature range 100 °C to 300 °C.

The energy measuring meter shall have an accuracy of 1 %.

5.4 Positioning the appliance

Built-in appliances are installed in accordance with the instructions for installation. Other appliances are placed with their back against a wall, unless otherwise specified in the instructions.

Floor-standing appliances are positioned between kitchen cabinets. Table-top appliances are positioned away from side walls.

5.5 Preheating

The appliance is initially at room temperature. However, if preheating is specified, the appliance is preheated in accordance with the instructions for use. If no instructions are given, the appliance is considered to be preheated after the thermostat has switched off the first time.

5.6 Setting of controls

The control is set to give the temperature specified for the test. However, if the temperature cannot be attained due to the construction of the control, the nearest setting related to the specified temperature is chosen.

6 Dimensions and mass

6.1 Overall dimensions

The overall dimensions of the appliance are measured and stated in millimetres as follows.

- cooking ranges and other appliances placed on a surface are measured as shown in figure 1;
- built-in **ovens** are measured as shown in figure 2;
- built-in **hobs** are measured as shown in figure 3.

6.2 Dimensions of hotplates and cooking zones

The main dimensions of **hotplates** and **cooking zones** are determined as follows:

- for **solid hotplates**, the diameter of the surface intended to come into direct contact with the bottom of **saucepans** is measured;
- for **tubular hotplates**, the diameter of the smallest periphery excluding any lead-in section is measured;
- for **glass ceramic hobs**, the diameters of the **cooking zones** are measured.

The dimensions are indicated in millimetres rounded to the nearest 5 mm.

If the **hotplates** or **cooking zones** are not circular the dimensions are determined as follows:

- for rectangular shapes, the lengths of the sides are measured;
- for elliptical and similar shapes, the major and minor dimensions are measured.

NOTE - If the markings identifying **cooking zones** are not clear, this is stated.

6.3 Internal dimensions of ovens

The height, width and depth of the usable volume within the **oven** are measured as shown in figure 4 and stated in millimetres.

The volume is calculated from these three dimensions and stated in litres.

6.4 Dimensions of shelves

The usable width and usable depth of the shelf are measured. The dimensions are determined 5 mm above the surface of the shelf.

The surface area is calculated and stated in square centimetres, rounded to the nearest 10 cm².

NOTE – The shelf may be a grid or a baking sheet.

6.5 Dimensions of grill grids

The width and depth of the grill grid are measured.

The surface area is calculated and stated in square centimetres, rounded to the nearest 10 cm².

NOTE – If the grill grid is the shelf of an oven, the dimensions are measured in accordance with 6.4.

6.6 Dimensions of warming compartments

The height, width and depth of the usable volume within the **warming compartment** are measured and indicated in millimetres.

NOTE – When a heating element is located inside the **warming compartment**, the dimensions are measured up to its most protruding part.

6.7 Level of hotplates

Cooking ranges with adjustable feet and **hobs** are installed with the perimeter of the hob surface horizontal.

A device consisting of a disc and an annular ring is placed centrally on the **hotplate**. A spirit level is placed centrally on the ring, as shown in figure 5.

A mass of 3 kg is placed on each of the remaining **hotplates**.

The spirit level is rotated to the position where it shows the maximum inclination from the horizontal. Its lower side is then lifted to the horizontal by inserting a feeler gauge between the level and the ring.

The measurement is carried out on each **hotplate**.

The deviation from the horizontal is given by the thickness of the gauge, in millimetres, to two decimal places. It is expressed as a percentage, rounded to the nearest 0,1 %.

NOTE – The direct conversion from millimetres to percentage is possible due to the ring having a diameter of 100 mm.

6.8 Distance between hotplates or cooking zones

The shortest distance between the edges of adjacent **hotplates** or **cooking zones** is measured and indicated in millimetres, rounded to the nearest millimetre. If the **hob** has more than two **hotplates** or **cooking zones**, the distance between each pair is determined.

NOTE – The result may be shown by means of a sketch.

6.9 Level of shelf

The shelf is placed in a central position in the **oven**.

NOTE 1 – The shelf may be a grid or a baking sheet.