



SLOVENSKI STANDARD

SIST EN 60705:2015

01-maj-2015

Nadomešča:

SIST EN 60705:2012

SIST EN 60705:2012/A1:2014

Gospodinjske mikrovalovne pečice - Metode za merjenje lastnosti (IEC 60705:2010)

Household microwave ovens - Methods for measuring performance

Mikrowellengeräte für den Hausgebrauch und ähnliche Zwecke - Verfahren zur Messung der Gebrauchstauglichkeit

Fours à micro-ondes à usage domestique - Méthodes de mesure de l'aptitude à la fonction

Ta slovenski standard je istoveten z: EN 60705:2015

ICS:

97.040.20	Štedilniki, delovni pulti, pečice in podobni aparati	Cooking ranges, working tables, ovens and similar appliances
-----------	--	--

SIST EN 60705:2015

en

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN 60705:2015

<https://standards.iteh.ai/catalog/standards/sist/9748e6c4-4f12-4df5-bb69-d21180de1db3/sist-en-60705-2015>

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 60705

March 2015

ICS 97.040.20

Supersedes EN 60705:2012

English Version

**Household microwave ovens - Methods for measuring
performance
(IEC 60705:2010 + A1:2014)**

Fours à micro-ondes à usage domestique - Méthodes de
mesure de l'aptitude à la fonction
(IEC 60705:2010 + A1:2014)

Mikrowellengeräte für den Hausgebrauch und ähnliche
Zwecke - Verfahren zur Messung der
Gebrauchstauglichkeit
(IEC 60705:2010 + A1:2014)

This European Standard was approved by CENELEC on 2015-03-11. 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.

SIST EN 60705:2015

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

Foreword

This document (EN 60705:2015) consists of the text of IEC 60705:2010 + A1:2014 prepared by SC 59K "Performance of household and similar electrical cooking appliances" of IEC/TC 59 "Performance of household and similar electrical appliances".

The following dates are fixed:

- latest date by which the document has to be implemented (dop) 2015-09-11
at national level by publication of an identical national standard or by endorsement
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2015-09-11

This document supersedes EN 60705:2012.

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.

This document has been prepared under a mandate given to CENELEC by the European Commission and the European Free Trade Association.

iTech STANDARD PREVIEW Endorsement notice (standards.iteh.ai)

The text of the International Standard IEC 60705:2010 + A1:2014 was approved by CENELEC as a European Standard without any modification.

SIST EN 60705:2015

In the official version, for Bibliography, the following notes have to be added for the standards indicated:

IEC 60335-2-25:2002	NOTE	Harmonized as EN 60335-2-25:2002 ¹⁾ (not modified).
IEC 60335-2-90:2006	NOTE	Harmonized as EN 60335-2-90:2006 (not modified).
IEC 60350:1999	NOTE	Harmonized as EN 60350:1999 ²⁾ (not modified).
CISPR 11:2009	NOTE	Harmonized as EN 55011:2009 (modified).

¹⁾ Superseded by EN 60335-2-25:2012 (IEC 60335-2-25:2010, modified).

²⁾ Superseded by EN 50304:2009/EN 60350:2009 (IEC 60350:1999, modified) + A1:2005, modified + A2:2008, modified).

Annex ZA (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

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60350-1 (mod)	2011	Household electric cooking appliances - Part 1: Ranges, ovens, steam ovens and grills - Methods for measuring performance	EN 60350-1	2013
			+A11	2014
IEC 60584-2	-	Thermocouples - Part 2: Tolerances	EN 60584-2	-
IEC 62301 (mod)	2011	Household electrical appliances - Measurement of standby power	EN 50564	2011
ISO 80000-1	2009	Quantities and units - Part 1: General	EN ISO 80000-1	2013

<https://standards.iteh.ai/catalog/standards/sist/9748e6c4-4f12-4df5-bb69-d21180de1db3/sist-en-60705-2015>

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN 60705:2015

<https://standards.iteh.ai/catalog/standards/sist/9748e6c4-4f12-4df5-bb69-d21180de1db3/sist-en-60705-2015>



IEC 60705

Edition 4.0 2010-04

INTERNATIONAL STANDARD

NORME INTERNATIONALE

Household microwave ovens – Methods for measuring performance

Fours à micro-ondes à usage domestique – Méthodes de mesure de l'aptitude
à la fonction

[SIST EN 60705:2015](https://standards.iteh.ai/catalog/standards/sist/9748e6c4-4f12-4df5-bb69-d21180de1db3/sist-en-60705-2015)

<https://standards.iteh.ai/catalog/standards/sist/9748e6c4-4f12-4df5-bb69-d21180de1db3/sist-en-60705-2015>

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

COMMISSION
ELECTROTECHNIQUE
INTERNATIONALE

PRICE CODE
CODE PRIX



ICS 97.040.20

ISBN 978-2-88910-257-0

CONTENTS

FOREWORD.....	4
1 Scope.....	6
2 Normative references.....	6
3 Terms and definitions	6
4 Classification	7
4.1 According to type.....	7
4.2 According to characteristics	7
5 List of measurements	7
6 General conditions for measurements	8
6.1 General	8
6.2 Supply voltage	8
6.3 Test room	8
6.4 Water	8
6.5 Initial condition of the oven	8
6.6 Control setting	8
7 Dimensions and volume	8
7.1 External dimensions	8
7.2 Usable internal dimensions and usable volume	9
7.2.1 General	9
7.2.2 Usable height.....	11
7.2.3 Usable width.....	12
7.2.4 Usable depth.....	12
7.2.5 Reciprocating tray	12
7.2.6 Usable volume	12
7.3 Overall internal dimensions and overall volume	12
7.3.1 General	12
7.3.2 Overall height (H)	13
7.3.3 Overall width (W)	13
7.3.4 Overall depth (D)	13
7.3.5 Overall volume of rectangular cavities	13
7.3.6 Overall volume of non-rectangular cavities	13
8 Determination of microwave power output	13
9 Efficiency.....	14
10 Technical tests for performance	15
10.1 General	15
10.2 Square tank test	15
10.2.1 Procedure.....	15
10.2.2 Evaluation.....	16
10.3 Multiple cup test	16
10.3.1 Procedure.....	16
10.3.2 Evaluation.....	18
11 Heating performance	18
11.1 Heating beverages.....	18
11.1.1 General	18
11.1.2 Procedure.....	18

11.1.3 Evaluation.....	19
11.2 Heating simulated food	19
11.2.1 Test purpose	19
11.2.2 Procedure.....	19
11.2.3 Evaluation.....	20
12 Cooking performance.....	20
12.1 General	20
12.2 Evaluation	20
12.3 Tests.....	21
12.3.1 Egg custard	21
12.3.2 Sponge cake.....	21
12.3.3 Meatloaf	22
12.3.4 Potato gratin	23
12.3.5 Cake.....	24
12.3.6 Chicken	24
13 Defrosting performance	25
13.1 General	25
13.2 Evaluation	25
13.3 Meat defrosting.....	26
13.3.1 Purpose of test	26
13.3.2 Container	26
13.3.3 Ingredients	27
13.3.4 Procedure.....	27
Annex A (informative) Regional defrosting tests.....	29
Annex B (informative) Dishes for Clause 12 and 13.....	32
Bibliography	33
Figure 1 – External dimensions of the microwave oven	9
Figure 2 – Usable internal dimensions	11
Figure 3 – Square tank.....	15
Figure 4 – Cup	16
Figure 5 – Cup positions for the test of 10.3	17
Figure 6 – Cup position for the test of 11.1	18
Figure 7 – Rectangular tank	19
Figure 8 – Shallow dish	27
Table 1 – List of measurements	7

INTERNATIONAL ELECTROTECHNICAL COMMISSION

HOUSEHOLD MICROWAVE OVENS – 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.
- 2) The formal decisions or agreements of IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National Committees.
- 3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
- 4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
- 5) IEC itself does not provide any attestation of conformity. Independent certification bodies provide conformity assessment services and, in some areas, access to IEC marks of conformity. IEC is not responsible for any services carried out by independent certification bodies.
- 6) All users should ensure that they have the latest edition of this publication.
- 7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
- 8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
- 9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 60705 has been prepared by subcommittee 59K: Ovens and microwave ovens, cooking ranges and similar appliances, of IEC technical committee 59: Performance of household and similar electrical appliances.

This fourth edition cancels and replaces the third edition published in 1999, its amendment 1 (2004) and its amendment 2 (2006), and constitutes a technical revision. The main changes from the previous edition are as follows:

- the definition of rounding is given in 3.5;
- the usable volume and the overall volume are respectively determined in 7.2 and 7.3.

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

FDIS	Report on voting
59K/195/FDIS	59K/198/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.

In this standard, the following print types are used:

- *test specifications: in italic type*
- notes: in small roman type
- other texts: in roman type.

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

The following differences exist in some countries:

Clause 7: Metric dimensional measures are not in common use (USA).

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.

[SIST EN 60705:2015](https://standards.iteh.ai/catalog/standards/sist/9748e6c4-4f12-4df5-bb69-d21180de1db3/sist-en-60705-2015)

<https://standards.iteh.ai/catalog/standards/sist/9748e6c4-4f12-4df5-bb69-d21180de1db3/sist-en-60705-2015>

HOUSEHOLD MICROWAVE OVENS – METHODS FOR MEASURING PERFORMANCE

1 Scope

This International Standard applies to **microwave ovens** for household use. It also applies to **combination microwave ovens**.

This standard defines the main performance characteristics of household microwave ovens which are of interest to the user, and it specifies methods for measuring these characteristics.

NOTE 1 This standard does not deal with

- ovens which cannot accept a load having a diameter of ≥ 200 mm;
- safety requirements (see IEC 60335-2-25 [1]* and IEC 60335-2-90 [2]).

NOTE 2 This standard does not apply to ovens incorporating conventional heating means only (see IEC 60350) [3].

2 Normative references

The following referenced documents are indispensable for the application 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.

ISO 80000-1:2009, *Quantities and units – Part 1: General*
<https://standards.iteh.ai/catalog/standards/sist/9748e6c4-4f12-4df5-bb69-d21180de1db3/sist-en-60705-2015>

3 Terms and definitions

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

3.1

microwave oven

appliance using electromagnetic energy in the ISM frequency band of 2 450 MHz, for heating food and beverages in the cavity

NOTE 1 The microwave oven may incorporate a browning element.

NOTE 2 ISM frequency bands are the electromagnetic frequencies established by the ITU and reproduced in CISPR 11 [4].

3.2

combination microwave oven

microwave oven in which the microwave energy is combined with thermal energy

3.3

microwave transparent

property of a material having negligible absorption and reflection of microwaves

NOTE The relative permittivity of a microwave transparent material is less than 7 and the relative loss factor is less than 0,015.

* Figures in square brackets refer to the bibliography.