



SLOVENSKI STANDARD

SIST EN 60335-2-25:1997

01-junij-1997

Nadomešča:

SIST EN 60335-2-25:1995

Safety of household and similar electrical appliances - Part 2: Particular requirements for micro wave ovens (IEC 335-2-25:1993, modified)

Safety of household and similar electrical appliances -- Part 2: Particular requirements for microwave ovens

Sicherheit elektrischer Geräte für den Hausgebrauch und ähnliche Zwecke -- Teil 2: Besondere Anforderungen für Mikrowellengeräte

Sécurité des appareils électrodomestiques et analogues -- Partie 2: Règles particulières pour les fours à micro-ondes

Ta slovenski standard je istoveten z: EN 60335-2-25:1995

ICS:

13.120	Varnost na domu	Domestic safety
97.040.20	Štedilniki, delovni pulti, pečice in podobni aparati	Cooking ranges, working tables, ovens and similar appliances

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en

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 60335-2-25

August 1995

ICS 97.040.20

Supersedes EN 60335-2-25:1990 and its amendments

Descriptors: Household electrical appliances, microwave ovens, safety requirements, protection against electric shock, fire protection, protection against mechanical hazard

English version

Safety of household and similar electrical appliances
Part 2: Particular requirements for microwave ovens
(IEC 335-2-25:1993, modified)

Sécurité des appareils
électrodomestiques et analogues
Partie 2: Règles particulières pour
les fours à micro-ondes
(CEI 335-2-25:1993, modifiée)

Sicherheit elektrischer Geräte für den
Hausgebrauch und ähnliche Zwecke
Teil 2: Besondere Anforderungen für
Mikrowellengeräte
(IEC 335-2-25:1993, modifiziert)

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This European Standard was approved by CENELEC on 1995-07-04. 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 Central Secretariat 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 Central Secretariat has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

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 proposal to endorse IEC 335-2-25:1993, document CLC/TC 61 (SEC) 922, was circulated under the enquiry procedure in September 1993. This proposal was discussed during the Oslo meeting in April 1994, when it was decided to submit a draft for EN 60335-2-25 to the voting procedure.

This draft was circulated in November 1994 and was ratified by CENELEC as EN 60335-2-25 on 1995-07-04.

This European Standard has been prepared by the secretariat of CENELEC Technical Committee TC 61.

The following dates are applicable:

- latest date of publication of an identical national standard (dop) 1996-01-01
- date of withdrawal of conflicting national standards (dow) 1998-01-01

For products which have complied with EN 60335-2-25:1990 including its amendments A51:1992 and A2:1993 before 1998-01-01, as shown by the manufacturer or by a certification body, this previous standard may continue to apply for production until 2003-01-01.

This standard has to be used in conjunction with EN 60335-1:1988, Safety of household and similar electrical appliances, Part 1: General requirements, including its amendments A2:1988, A5:1989, A6:1989, A51:1991, A52:1992, A53:1992, A54:1992, A55:1993 and A56:1995.

Where a particular subclause of Part 1 is not mentioned in this Part 2, that subclause applies as far as is reasonable. Where this standard states "addition", "modification" or "replacement", the relevant text of Part 1 is to be adapted accordingly.

Subclauses and figures which are additional to those in Part 1 are numbered starting with 101. Appendices which are additional to those in part 1 are lettered AA, BB, etc.

There are no special national conditions (snc) causing a deviation from this European Standard, other than those are listed in annex ZX of EN 60335-1.

There are no national deviations from this European Standard other than those listed in annex ZY of EN 60335-1.

Other publications quoted in this standard:

EN 60335-2-6:1990	Safety of household and similar electrical appliances Part 2: Particular requirements for cooking ranges, cooking tables, ovens and similar appliances for household use
IEC 384-14:1981	Fixed capacitors for use in electronic equipment Part 14: Sectional specification: Fixed capacitors for radio interference suppression - Selection of methods of test and general requirements

NOTE - The following print types are used:

- requirements: in roman type;
- test specifications: in italic type
- explanations: in small roman type;

p In this document p is used in the margin to indicate instructions for preparing the printed version.

Endorsement notice

The text of the International Standard IEC 335-2-25:1993 was approved by CENELEC as a European Standard with agreed common modifications as given below.

COMMON MODIFICATIONS

p **Foreword** Delete.

1 **Scope**

p 1.1 Replace "IEC 335-2-6" by "EN 60335-2-6".

7 **Marking**

p 7.12 Add:

The instruction sheet shall warn the user that the contents of feeding bottles and baby food jars are to be stirred or shaken and that the temperature is to be checked before consumption to avoid burns.

11 **Heating**

p 11.7.4 Replace "IEC 335-2-6" by "EN 60335-2-6" (in three places).

p 11.7.5 Replace "IEC 335-2-6" by "EN 60335-2-6".

p Add: <https://standards.iteh.ai/catalog/standards/sist/61f2bb86-dee1-4e20-8fcd-8a3c106a119c/sist-en-60335-2-25-1997>

11.8 *Addition:*

The limit of 60 K for external enclosure applies to microwave ovens, including those with a browning function.

For stationary microwave ovens incorporating conventional heating means and stationary combination microwave ovens, the temperature rise limits specified in EN 60335-2-6 apply.

18 **Endurance**

p 18.102 Replace "IEC 335-2-6" by "EN 60335-2-6".

19 **Abnormal operation**

p 19.104 Replace "IEC 65" by "EN 60065".

22 **Construction**

p 22.105 Delete the last explanation.

- 29 **Creepage distances, clearances and distances through insulation**
- p 29.1 In the first paragraph replace "250 V r.m.s. (354 V peak)" by "440 V r.m.s. (630 V peak)".
- p Delete the first two lines in table 1.
- 30 **Resistance to heat, fire and tracking**
- p Replace the text by:
- This clause of Part 1 is applicable except as follows:
- 30.4 *Addition:*
- Microwave ovens with programmable features that allow a delayed start and those with a keep-warm function are considered to be appliances liable to be operated while unattended. Other microwave ovens are considered to be appliances which are operated while attended.

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NORME
INTERNATIONALE
INTERNATIONAL
STANDARD

CEI
IEC
335-2-25

Troisième édition
Third edition
1993-09

Sécurité des appareils électrodomestiques
et analogues

Partie 2:

Règles particulières pour les fours à micro-ondes

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Safety of household and similar
electrical appliances

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Part 2:

Particular requirements for microwave ovens

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Commission Electrotechnique Internationale
International Electrotechnical Commission
Международная Электротехническая Комиссия

CODE PRIX
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For price, see current catalogue

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

SAFETY OF HOUSEHOLD AND SIMILAR
ELECTRICAL APPLIANCES

Part 2: Particular requirements for microwave ovens

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 cooperation 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.
- 2) The formal decisions or agreements of the IEC on technical matters, prepared by technical committees on which all the National Committees having a special interest therein are represented, express, as nearly as possible, an international consensus of opinion on the subjects dealt with.
- 3) They have the form of recommendations for international use published in the form of standards, technical reports or guides and they are accepted by the National Committees in that sense.
- 4) In order to promote international unification, IEC National Committees undertake to apply IEC International Standards transparently to the maximum extent possible in their national and regional standards. Any divergence between the IEC Standard and the corresponding national or regional standard shall be clearly indicated in the latter.

SIST EN 60335-2-25:1997

International Standard IEC 335-2-25 has been prepared by sub-committee 61B: Safety of household microwave ovens, of IEC technical committee 61: Safety of household and similar electrical appliances.

This third edition cancels and replaces the second edition published in 1988, amendment 1 (1989), amendment 2 (1991) and amendment 3 (1992).

The text of this standard is based on the second edition, amendments 1, 2 and 3, and the following documents:

DIS	Reports on voting
61B(CO)50	61B(CO)53
61B(CO)51	61B(CO)54
61B(CO)52	61B(CO)56
61B(CO)55	61B(CO)57

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 part 2 is intended to be used in conjunction with IEC 335-1. It was established on the basis of the second edition (1976) of that publication, as modified by Amendments No. 1 (1977), No. 2 (1979), No. 3 (1982), No. 4 (1984) and No. 5 (1986). Consideration may be given to future editions of, or amendments to, IEC 335-1.

This part 2 supplements or modifies the corresponding clauses in IEC 335-1, so as to convert that publication into the IEC standard: *Safety requirements for microwave ovens* (third edition).

Where a particular subclause of part 1 is not mentioned in this part 2, that subclause applies as far as is reasonable. Where this second edition states "addition", "modification" or "replacement", the relevant requirement, test specification or explanatory matter in part 1 should be adapted accordingly.

The following differences exist in some countries:

- microwave leakage is not measured during the tests (19.11) (USA);
- the input voltage variation is not applied (19.104) (USA);
- the force is 222 N (21.102) (USA);
- microwave leakage is not to exceed 50 W/m² (21.105) (Japan and USA);
- microwave leakage is not to exceed 50 W/m² (22.113) (Japan and USA);
- microwave leakage is not to exceed 50 W/m² (22.115) (Japan and USA).

In this publication:

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1) The following print types are used:

- requirements proper: in roman type;
- *test specifications: in italic type;*
- explanatory matter: in small roman type;

2) subclauses or figures which are additional to those in part 1 are numbered starting from 101; additional appendices are lettered AA, BB, etc.

The following IEC publications are quoted in this standard:

IEC 335-2-6: 1986, *Safety of household and similar electrical appliances – Part 2: Particular requirements for cooking ranges, cooking tables, ovens and similar appliances for household use*

IEC 384-14: 1981, *Fixed capacitors for use in electronic equipment – Part 14: Sectional specification: Fixed capacitors for radio interference suppression – Selection of methods of test and general requirements*

SAFETY OF HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES

Part 2: Particular requirements for microwave ovens

1 Scope

This clause of part 1 is applicable, except as follows:

1.1 Replacement:

This standard applies to appliances for heating food and beverages using electromagnetic energy (microwaves) in one or more of the I.S.M. frequency bands¹⁾ between 300 MHz and 30 GHz and intended for household use. These appliances may also incorporate a browning or steaming function.

For combination microwave ovens IEC 335-2-6 is also applicable.

This standard does not take into account the special hazards which exist in nurseries and other places where there are young children or aged or infirm persons without supervision; in such cases additional requirements may be necessary.

This standard does not apply to:

- appliances for industrial purposes;
- appliances intended to be used in locations where special conditions prevail, such as the presence of a corrosive or explosive atmosphere (dust, vapour or gas);
- appliances for medical purposes.

Until an IEC standard for microwave ovens for commercial purposes is issued, this standard may form a guide to suitable requirements and tests for such appliances.

For appliances intended to be used in vehicles or on board ships or aircraft, additional requirements may be necessary.

For appliances intended to be used in tropical countries, special requirements may be necessary.

Attention is drawn to the fact that in many countries additional requirements are specified by the national health authorities and the national authorities responsible for the protection of labour.

2 Definitions

This clause of part 1 is applicable, except as follows:

2.2.6 Addition:

Rated frequency refers to input frequency.

¹⁾ I.S.M. frequency bands are the electromagnetic frequencies established by international treaty for industrial, scientific and medical purposes.

2.2.30 Replacement:

normal load denotes that the appliance is operated with a potable water load of initially $(1\ 000 \pm 50)$ g in a cylindrical borosilicate glass vessel having a maximum material thickness of 3 mm and an outside diameter of approximately 190 mm. The load is placed at the centre of the shelf. The initial temperature of the water is (20 ± 2) °C.

Additional definitions:

2.2.101 microwave oven: Appliance designed to use microwave energy for heating food and beverages in a cavity.

Examples of heating are defrosting, warming and cooking.

2.2.102 combination microwave oven: Appliance which combines some or all of the thermal heating functions of conventional ovens with microwave heating in a cavity.

Microwave ovens incorporating a browning function only are not considered to be combination microwave ovens.

2.2.103 cavity: Space enclosed by the inner walls and door and into which food and beverages are placed.

2.2.104 microwave enclosure: Structure intended to effectively confine the microwave energy to a defined region.

Examples are the cavity, door seals and waveguides.

2.2.105 shelf: Horizontal support in the cavity on which the load is placed.

2.2.106 browning function: Process which supplements microwave cooking by means of radiant heating elements.

2.2.107 magnetron: Type of vacuum tube used to generate microwaves.

2.2.108 stirrer: Device which changes the microwave relationship between the load in the cavity and the microwave generator by mechanical, electrical or magnetic means.

Examples of such devices are a rotating shelf, a moving secondary antenna or a metal propeller.

2.2.109 microwave transparency: Property of a material having negligible absorption and reflection of microwaves.

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

2.2.110 Interlock: Safety device or system, which prevents a particular situation unless specified conditions exist.

An example of an interlock is a switch which prevents the operation of the magnetron unless the cavity door is closed.