IEC 60335-2-25

Edition 8.0 2024-07
REDLINE VERSION

INTERNATIONAL STANDARD

colour inside

Household and similar electrical appliances – Safety – Part 2-25: Particular requirements for microwave ovens, including combination microwave ovens

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

ICS 13.120; 97.040.20

ISBN 978-2-8322-9404-8

Warning! Make sure that you obtained this publication from an authorized distributor.

CONTENTS

FOREWORD 4
INTRODUCTION 2
1 Scope 8
2 Normative references 9
3 Terms and definitions 9
4 General requirement 10
5 General conditions for the tests 10
6 Classification 11
7 Marking and instructions 11
8 Protection against access to live parts 13
9 Starting of motor-operated appliances 13
10 Power input and current 14
11 Heating 14
12 ~~Void~~ Charging of metal-ion batteries 16
13 Leakage current and electric strength at operating temperature 16
14 Transient overvoltages 16
15 Moisture resistance 17
16 Leakage current and electric strength 19
17 Overload protection of transformers and associated circuits 19
18 Endurance 20
19 Abnormal operation 20
20 Stability and mechanical hazards 22
21 Mechanical strength 23
22 Construction 24
23 Internal wiring 31
24 Components 31
25 Supply connection and external flexible cords 31
26 Terminals for external conductors 32
27 Provision for earthing 32
28 Screws and connections 32
29 Clearances, creepage distances and solid insulation 32
30 Resistance to heat and fire 32
31 Resistance to rusting 32
32 Radiation, toxicity and similar hazards 32
Annexes 38
Annex A (informative) Routine tests 39
Annex B (normative) Battery-operated appliances, separable batteries and detachable batteries for battery-operated appliances 41
Annex R (normative) Software evaluation 42
Annex AA (normative) Combination microwave ovens 43
Annex BB (normative) Microwave ovens intended to be used on board ships 46
Bibliography 48

Figure 101 – Test rod for door interlock concealment 34
~~Figure 102 – Test cabinet including working surface, position of funnel and example for direction of tilt ..... .~~
Figure 102 – Void 34
Figure 103 – Test cabinet including separation board, position of funnel and example for direction of tilt 35
Figure 104 – Probe for measuring surface temperatures 35
Figure 105 – Front view of appliance with identification of excluded areas 36
Figure 106 – Arrangement of work surface for spillage test on built-in microwave oven 36
Figure 107 – Detail of bottle cap and position of hole 37
Figure 108 – Spillage solution bottle 37
Figure 109 – Bottle position for the spillage test 37

Table 101 – Maximum temperature rises of external accessible surfaces under normal operating conditions 16

INTERNATIONAL ELECTROTECHNICAL COMMISSION

_____

HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES – SAFETY –

Part 2-25: Particular requirements for microwave ovens, including combination microwave ovens

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) IEC draws attention to the possibility that the implementation of this document may involve the use of (a) patent(s). IEC takes no position concerning the evidence, validity or applicability of any claimed patent rights in respect thereof. As of the date of publication of this document, IEC had not received notice of (a) patent(s), which may be required to implement this document. However, implementers are cautioned that this may not represent the latest information, which may be obtained from the patent database available at https://patents.iec.ch. IEC shall not be held responsible for identifying any or all such patent rights.

This redline version of the official IEC Standard allows the user to identify the changes made to the previous edition IEC 60335-2-25:2020. A vertical bar appears in the margin wherever a change has been made. Additions are in green text, deletions are in strikethrough red text.

IEC 60335-2-25 has been prepared by subcommittee 61B: Safety of microwave appliances for household and commercial use, of IEC technical committee 61: Safety of household and similar electrical appliances. It is an International Standard.

This eighth edition cancels and replaces the seventh edition published in 2020. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

a) some subclauses have been modified for the appliance outlets and socket-outlets;
b) Subclause 7.12 has been improved in clarity;
c) Subclauses 8.1.1 and 20.2 have been modified to adopt test probe 19;
d) Subclauses 10.1 and 10.2 have been improved in clarity for inverter type microwave ovens;
e) maximum temperature rises of external accessible surfaces have been added in Subclause 11.8;
f) test criterion has been modified in Subclause 15.101;
g) Subclause 15.102 has been modified for harmonization with IEC 60335-2-6;
h) Subclauses 8.1.3, 15.103, 19.11.2, 19.13, 22.105, 22.106, 22.111 and Figure 101 have been improved in clarity;
i) Subclauses 22.103.2, 22.105 and 22.120 have been modified to adopt test probe 18;
j) Subclause 16.101 has been modified to move the content of 16.101.1, 16.101.2 directly under 16.101;
k) Subclause 22.119 has been modified to move the content of 22.119.1, 22.119.2 and 22.119.3 directly under 22.119.

The text of this International Standard is based on the following documents:

Draft	Report on voting
61B/701/FDIS	61B/705/RVD

Full information on the voting for its approval can be found in the report on voting indicated in the above table.

The language used for the development of this International Standard is English

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/standardsdev/publications.

A list of all parts of the IEC 60335 series, under the general title: *Household and similar electrical appliances – Safety*, can be found on the IEC website.

This part 2 is to be used in conjunction with the latest edition of IEC 60335-1 and its amendments unless that edition precludes it; in that case, the latest edition that does not preclude it is used. It was established on the basis of the sixth edition (2020) of that standard.

NOTE 1 When "Part 1" is mentioned in this standard, it refers to IEC 60335-1.

This part 2 supplements or modifies the corresponding clauses in IEC 60335-1, so as to convert that publication into the IEC standard: Particular requirements for microwave ovens, including combination microwave ovens.

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

NOTE 2 The following numbering system is used:

– subclauses, tables and figures that are numbered starting from 101 are additional to those in Part 1;

– unless notes are in a new subclause or involve notes in Part 1, they are numbered starting from 101, including those in a replaced clause or subclause;

– additional annexes are lettered AA, BB, etc.

NOTE 3 The following print types are used:

– requirements: in roman type;

– *test specifications: in italic type;*

– notes: in small roman type.

Words in **bold** in the text are defined in Clause 3. When a definition concerns an adjective, the adjective and the associated noun are also in **bold**.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under webstore.iec.ch in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn, or
- revised.

NOTE 4 The attention of National Committees is drawn to the fact that equipment manufacturers and testing organizations can need a transitional period following publication of a new, amended or revised IEC publication in which to make products in accordance with the new requirements and to equip themselves for conducting new or revised tests.

It is the recommendation of the committee that the content of this publication be adopted for implementation nationally not earlier than 12 months or later than 36 months from the date of publication.

The following differences exist in the countries indicated below.

– 5.3: Microwave leakage is not to exceed 10 W/m^2 during the initial test (Japan and USA).

– 6.1: Microwave ovens may be class 0I if the rated voltage does not exceed more than 150 V (Japan).

– 7.12: Specific instructions exist pertaining to using and servicing **microwave ovens** with respect to the risk of exposure to microwave energy (USA).

– 7.12: It is prohibited to place the appliance in a cabinet with a door (Japan).

– Clause 18: The test is carried out on two appliances (USA).

– 19.11.2: The input voltage variation is not applied (USA).

– 19.13: Microwave leakage is measured only at the end of each test (USA).

– 21.102: The applied force is 222 N (USA).

– 21.105: Microwave leakage is not to exceed 50 W/m^2 (Japan and USA).

– 22.111: Microwave leakage is measured only at the end of the test (USA).

– 22.112: Microwave leakage is not to exceed 50 W/m^2 (Japan and USA).

– 22.115: All access to the cavity has to be prevented (USA).

INTRODUCTION

It has been assumed in the drafting of this International Standard that the execution of its provisions is entrusted to appropriately qualified and experienced persons.

Guidance documents concerning the application of the safety requirements for appliances can be accessed via TC 61 and SC 61B supporting documents on the IEC website

https://www.iec.ch/tc61/supportingdocuments
https://www.iec.ch/sc61b/supportingdocuments

This information is given for the convenience of users of this International Standard and does not constitute a replacement for the normative text in this standard.

This standard recognizes the internationally accepted level of protection against hazards such as electrical, mechanical, thermal, fire and radiation of appliances when operated as in normal use taking into account the manufacturer's instructions. It also covers abnormal situations that can be expected in practice and takes into account the way in which electromagnetic phenomena can affect the safe operation of appliances.

This standard takes into account the requirements of IEC 60364 as far as possible so that there is compatibility with the wiring rules when the appliance is connected to the supply mains. However, national wiring rules ~~may~~ can differ.

If an appliance within the scope of this standard also incorporates functions that are covered by another part 2 of IEC 60335, the relevant part 2 is applied to each function separately, as far as is reasonable. If applicable, the influence of one function on the other is taken into account.

When a part 2 standard does not include additional requirements to cover hazards dealt with in Part 1, Part 1 applies.

NOTE 1 This means that the technical committees responsible for the part 2 standards have determined that it is not necessary to specify particular requirements for the appliance in question over and above the general requirements.

This standard is a product family standard dealing with the safety of appliances and takes precedence over horizontal and generic standards covering the same subject.

NOTE 2 ~~Horizontal and generic standards~~ Horizontal publications, basic safety publications and group safety publications covering a hazard are not applicable since they have been taken into consideration when developing the general and particular requirements for the IEC 60335 series of standards. ~~For example, in the case of temperature requirements for surfaces on many appliances, generic standards, such as ISO 13732-1 for hot surfaces, are not applicable in addition to Part 1 or part 2 standards.~~

An appliance that complies with the text of this standard will not necessarily be considered to comply with the safety principles of the standard if, when examined and tested, it is found to have other features which impair the level of safety covered by these requirements.

An appliance employing materials or having forms of construction differing from those detailed in the requirements of this standard ~~may~~ can be examined and tested according to the intent of the requirements and, if found to be substantially equivalent, may be considered to comply with the standard.

NOTE 3 Standards dealing with non-safety aspects of household appliances are:

– IEC standards published by TC 59 concerning methods of measuring performance;
– CISPR 11, CISPR 14-1 and relevant IEC 61000-3 series standards concerning electromagnetic emissions;
– CISPR 14-2 concerning electromagnetic immunity;
– IEC standards published by TC 111 concerning environmental matters.

HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES – SAFETY –

Part 2-25: Particular requirements for microwave ovens, including combination microwave ovens

1 Scope

This clause of Part 1 is replaced by the following.

This part of IEC 60335 deals with the safety of **microwave ovens** for household and similar use, their **rated voltage** being not more than 250 V including direct current (DC) supplied appliances and **battery-operated appliances**.

This standard also deals with **combination microwave ovens**, for which normative Annex AA is applicable.

This standard also deals with **microwave ovens** intended to be used on board ships, for which normative Annex BB is applicable.

Appliances not intended for normal household use but which nevertheless ~~may~~ can be a source of danger to the public, such as appliances intended to be used by laymen in shops, in light industry and on farms, are within the scope of this standard. However, if the appliance is intended to be used professionally to process food for commercial purposes, the appliance is not considered to be for household and similar use only.

As far as is practicable, this standard deals with the common hazards presented by appliances that are encountered by all persons in and around the home. However, in general, it does not take into account

– persons (including children) whose
  - physical, sensory or mental capabilities; or
  - lack of experience and knowledge

  prevents them from using the appliance safely without supervision or instruction;
– children playing with the appliance.

~~NOTE 101~~ Attention is drawn to the fact that

– for appliances intended to be used in vehicles or on board ships or aircraft, additional requirements can be necessary;
– in many countries, additional requirements are specified by the national health authorities, the national authorities responsible for the protection of labour and similar authorities.

~~NOTE 102~~ This standard does not apply to

– commercial **microwave ovens** (IEC 60335-2-90);
– commercial microwave appliances with insertion or contacting applicators (IEC 60335-2-110);
– industrial microwave heating equipment (IEC 60519-6);
– appliances for medical purposes (IEC 60601);
– 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).

2 Normative references

This clause of Part 1 is applicable except as follows.

Addition:

IEC 60068-2-6, *Environmental testing – Part 2: Tests – Test Fc: Vibration (sinusoidal)*

IEC 60068-2-27, *Environmental testing – Part 2-27: Tests – Test Ea and guidance: Shock*

IEC 60068-2-52, *Environmental testing – Part 2-52: Tests – Test Kb: Salt mist, cyclic (sodium chloride solution)*

~~IEC 60335-2-5:2012, *Household and similar electrical appliances – Safety – Part 2-5: Particular requirements for dishwashers*~~

IEC 60335-2-6:~~2014~~ [1], *Household and similar electrical appliances – Safety – Part 2-6: Particular requirements for stationary cooking ranges, hobs, ovens and similar appliances*

IEC 60335-2-9, *Household and similar electrical appliances – Safety – Part 2-9: Particular requirements for grills, toasters and similar portable cooking appliances*

IEC 60584-1, *Thermocouples – Part 1: EMF specifications and tolerances*

[1] Under preparation. Stage at the time of publication: IEC/FDIS 60335-2-6:2024.

IEC 60335-2-25

Edition 8.0 2024-07

INTERNATIONAL STANDARD

NORME INTERNATIONALE

Household and similar electrical appliances – Safety – Part 2-25: Particular requirements for microwave ovens, including combination microwave ovens

Appareils électrodomestiques et analogues – Sécurité – Partie 2-25: Exigences particulières pour les fours à micro-ondes, y compris les fours à micro-ondes combinés

IEC 60335-2-25:2024-07(en-fr)

CONTENTS

FOREWORD 4
INTRODUCTION 7
1 Scope 8
2 Normative references 9
3 Terms and definitions 9
4 General requirement 10
5 General conditions for the tests 10
6 Classification 11
7 Marking and instructions 11
8 Protection against access to live parts 13
9 Starting of motor-operated appliances 13
10 Power input and current 14
11 Heating 14
12 Charging of metal-ion batteries 16
13 Leakage current and electric strength at operating temperature 16
14 Transient overvoltages 16
15 Moisture resistance 17
16 Leakage current and electric strength 18
17 Overload protection of transformers and associated circuits 19
18 Endurance 19
19 Abnormal operation 20
20 Stability and mechanical hazards 22
21 Mechanical strength 22
22 Construction 24
23 Internal wiring 30
24 Components 30
25 Supply connection and external flexible cords 31
26 Terminals for external conductors 31
27 Provision for earthing 31
28 Screws and connections 31
29 Clearances, creepage distances and solid insulation 31
30 Resistance to heat and fire 31
31 Resistance to rusting 32
32 Radiation, toxicity and similar hazards 32
Annexes 37
Annex A (informative) Routine tests 38
Annex B (normative) Battery-operated appliances, separable batteries and detachable batteries for battery-operated appliances 40
Annex R (normative) Software evaluation 41
Annex AA (normative) Combination microwave ovens 42
Annex BB (normative) Microwave ovens intended to be used on board ships 45
Bibliography 47

Figure 101 – Test rod for door interlock concealment 33
Figure 102 – Void 33
Figure 103 – Test cabinet including separation board, position of funnel and example for direction of tilt 33
Figure 104 – Probe for measuring surface temperatures 34
Figure 105 – Front view of appliance with identification of excluded areas 35
Figure 106 – Arrangement of work surface for spillage test on built-in microwave oven 35
Figure 107 – Detail of bottle cap and position of hole 36
Figure 108 – Spillage solution bottle 36
Figure 109 – Bottle position for the spillage test 36

Table 101 – Maximum temperature rises of external accessible surfaces under normal operating conditions 16

INTERNATIONAL ELECTROTECHNICAL COMMISSION

_____

HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES – SAFETY –

Part 2-25: Particular requirements for microwave ovens, including combination microwave ovens

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) IEC draws attention to the possibility that the implementation of this document may involve the use of (a) patent(s). IEC takes no position concerning the evidence, validity or applicability of any claimed patent rights in respect thereof. As of the date of publication of this document, IEC had not received notice of (a) patent(s), which may be required to implement this document. However, implementers are cautioned that this may not represent the latest information, which may be obtained from the patent database available at https://patents.iec.ch. IEC shall not be held responsible for identifying any or all such patent rights.

IEC 60335-2-25 has been prepared by subcommittee 61B: Safety of microwave appliances for household and commercial use, of IEC technical committee 61: Safety of household and similar electrical appliances. It is an International Standard.

This eighth edition cancels and replaces the seventh edition published in 2020. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

a) some subclauses have been modified for the appliance outlets and socket-outlets;
b) Subclause 7.12 has been improved in clarity;

c) Subclauses 8.1.1 and 20.2 have been modified to adopt test probe 19;

d) Subclauses 10.1 and 10.2 have been improved in clarity for inverter type microwave ovens;

e) maximum temperature rises of external accessible surfaces have been added in Subclause 11.8;

f) test criterion has been modified in Subclause 15.101;

g) Subclause 15.102 has been modified for harmonization with IEC 60335-2-6;

h) Subclauses 8.1.3, 15.103, 19.11.2, 19.13, 22.105, 22.106, 22.111 and Figure 101 have been improved in clarity;

i) Subclauses 22.103.2, 22.105 and 22.120 have been modified to adopt test probe 18;

j) Subclause 16.101 has been modified to move the content of 16.101.1, 16.101.2 directly under 16.101;

k) Subclause 22.119 has been modified to move the content of 22.119.1, 22.119.2 and 22.119.3 directly under 22.119.

The text of this International Standard is based on the following documents:

Draft	Report on voting
61B/701/FDIS	61B/705/RVD

Full information on the voting for its approval can be found in the report on voting indicated in the above table.

The language used for the development of this International Standard is English

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/standardsdev/publications.

A list of all parts of the IEC 60335 series, under the general title: *Household and similar electrical appliances – Safety*, can be found on the IEC website.

This part 2 is to be used in conjunction with the latest edition of IEC 60335-1 and its amendments unless that edition precludes it; in that case, the latest edition that does not preclude it is used. It was established on the basis of the sixth edition (2020) of that standard.

NOTE 1 When "Part 1" is mentioned in this standard, it refers to IEC 60335-1.

This part 2 supplements or modifies the corresponding clauses in IEC 60335-1, so as to convert that publication into the IEC standard: Particular requirements for microwave ovens, including combination microwave ovens.

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

NOTE 2 The following numbering system is used:

– subclauses, tables and figures that are numbered starting from 101 are additional to those in Part 1;

– unless notes are in a new subclause or involve notes in Part 1, they are numbered starting from 101, including those in a replaced clause or subclause;

– additional annexes are lettered AA, BB, etc.

NOTE 3 The following print types are used:

– requirements: in roman type;

– *test specifications: in italic type;*

– notes: in small roman type.

Words in **bold** in the text are defined in Clause 3. When a definition concerns an adjective, the adjective and the associated noun are also in **bold**.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under webstore.iec.ch in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn, or
- revised.

NOTE 4 The attention of National Committees is drawn to the fact that equipment manufacturers and testing organizations can need a transitional period following publication of a new, amended or revised IEC publication in which to make products in accordance with the new requirements and to equip themselves for conducting new or revised tests.

It is the recommendation of the committee that the content of this publication be adopted for implementation nationally not earlier than 12 months or later than 36 months from the date of publication.

The following differences exist in the countries indicated below.

– 5.3: Microwave leakage is not to exceed 10 W/m^2 during the initial test (Japan and USA).

– 6.1: Microwave ovens may be class 0I if the rated voltage does not exceed more than 150 V (Japan).

– 7.12: Specific instructions exist pertaining to using and servicing **microwave ovens** with respect to the risk of exposure to microwave energy (USA).

– 7.12: It is prohibited to place the appliance in a cabinet with a door (Japan).

– Clause 18: The test is carried out on two appliances (USA).

– 19.11.2: The input voltage variation is not applied (USA).

– 19.13: Microwave leakage is measured only at the end of each test (USA).

– 21.102: The applied force is 222 N (USA).

– 21.105: Microwave leakage is not to exceed 50 W/m^2 (Japan and USA).

– 22.111: Microwave leakage is measured only at the end of the test (USA).

– 22.112: Microwave leakage is not to exceed 50 W/m^2 (Japan and USA).

– 22.115: All access to the cavity has to be prevented (USA).

INTRODUCTION

It has been assumed in the drafting of this International Standard that the execution of its provisions is entrusted to appropriately qualified and experienced persons.

Guidance documents concerning the application of the safety requirements for appliances can be accessed via TC 61 and SC 61B supporting documents on the IEC website

https://www.iec.ch/tc61/supportingdocuments
https://www.iec.ch/sc61b/supportingdocuments

This information is given for the convenience of users of this International Standard and does not constitute a replacement for the normative text in this standard.

This standard recognizes the internationally accepted level of protection against hazards such as electrical, mechanical, thermal, fire and radiation of appliances when operated as in normal use taking into account the manufacturer's instructions. It also covers abnormal situations that can be expected in practice and takes into account the way in which electromagnetic phenomena can affect the safe operation of appliances.

This standard takes into account the requirements of IEC 60364 as far as possible so that there is compatibility with the wiring rules when the appliance is connected to the supply mains. However, national wiring rules can differ.

If an appliance within the scope of this standard also incorporates functions that are covered by another part 2 of IEC 60335, the relevant part 2 is applied to each function separately, as far as is reasonable. If applicable, the influence of one function on the other is taken into account.

When a part 2 standard does not include additional requirements to cover hazards dealt with in Part 1, Part 1 applies.

NOTE 1 This means that the technical committees responsible for the part 2 standards have determined that it is not necessary to specify particular requirements for the appliance in question over and above the general requirements.

This standard is a product family standard dealing with the safety of appliances and takes precedence over horizontal and generic standards covering the same subject.

NOTE 2 Horizontal publications, basic safety publications and group safety publications covering a hazard are not applicable since they have been taken into consideration when developing the general and particular requirements for the IEC 60335 series of standards.

An appliance that complies with the text of this standard will not necessarily be considered to comply with the safety principles of the standard if, when examined and tested, it is found to have other features which impair the level of safety covered by these requirements.

An appliance employing materials or having forms of construction differing from those detailed in the requirements of this standard can be examined and tested according to the intent of the requirements and, if found to be substantially equivalent, may be considered to comply with the standard.

NOTE 3 Standards dealing with non-safety aspects of household appliances are:

– IEC standards published by TC 59 concerning methods of measuring performance;
– CISPR 11, CISPR 14-1 and relevant IEC 61000-3 series standards concerning electromagnetic emissions;
– CISPR 14-2 concerning electromagnetic immunity;
– IEC standards published by TC 111 concerning environmental matters.

HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES – SAFETY –

Part 2-25: Particular requirements for microwave ovens, including combination microwave ovens

1 Scope

This clause of Part 1 is replaced by the following.

This part of IEC 60335 deals with the safety of **microwave ovens** for household and similar use, their **rated voltage** being not more than 250 V including direct current (DC) supplied appliances and **battery-operated appliances**.

This standard also deals with **combination microwave ovens**, for which normative Annex AA is applicable.

This standard also deals with **microwave ovens** intended to be used on board ships, for which normative Annex BB is applicable.

Appliances not intended for normal household use but which nevertheless can be a source of danger to the public, such as appliances intended to be used by laymen in shops, in light industry and on farms, are within the scope of this standard. However, if the appliance is intended to be used professionally to process food for commercial purposes, the appliance is not considered to be for household and similar use only.

As far as is practicable, this standard deals with the common hazards presented by appliances that are encountered by all persons in and around the home. However, in general, it does not take into account

– persons (including children) whose
  - physical, sensory or mental capabilities; or
  - lack of experience and knowledge

  prevents them from using the appliance safely without supervision or instruction;
– children playing with the appliance.

Attention is drawn to the fact that

– for appliances intended to be used in vehicles or on board ships or aircraft, additional requirements can be necessary;
– in many countries, additional requirements are specified by the national health authorities, the national authorities responsible for the protection of labour and similar authorities.

This standard does not apply to

– commercial **microwave ovens** (IEC 60335-2-90);
– commercial microwave appliances with insertion or contacting applicators (IEC 60335-2-110);
– industrial microwave heating equipment (IEC 60519-6);
– appliances for medical purposes (IEC 60601);
– 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).

2 Normative references

This clause of Part 1 is applicable except as follows.

Addition:

IEC 60068-2-6, *Environmental testing – Part 2: Tests – Test Fc: Vibration (sinusoidal*)

IEC 60068-2-27, *Environmental testing – Part 2-27: Tests – Test Ea and guidance: Shock*

IEC 60068-2-52, *Environmental testing – Part 2-52: Tests – Test Kb: Salt mist, cyclic (sodium chloride solution)*

IEC 60335-2-6:—[1], *Household and similar electrical appliances – Safety – Part 2-6: Particular requirements for stationary cooking ranges, hobs, ovens and similar appliances*

IEC 60335-2-9, *Household and similar electrical appliances – Safety – Part 2-9: Particular requirements for grills, toasters and similar portable cooking appliances*

IEC 60584-1, *Thermocouples – Part 1: EMF specifications and tolerances*

[1] Under preparation. Stage at the time of publication: IEC/FDIS 60335-2-6:2024.

SOMMAIRE

AVANT-PROPOS 50
INTRODUCTION 53
1 Domaine d'application 54
2 Références normatives 55
3 Termes et définitions 55
4 Exigences générales 56
5 Conditions générales d'essais 57
6 Classification 57
7 Marquage et instructions 57
8 Protection contre l'accès aux parties actives 60
9 Démarrage des appareils à moteur 60
10 Puissance et courant 60
11 Échauffements 61
12 Charge des batteries à ions métalliques 63
13 Courant de fuite et rigidité diélectrique à la température de régime 63
14 Surtensions transitoires 63
15 Résistance à l'humidité 64
16 Courant de fuite et rigidité diélectrique 65
17 Protection contre la surcharge des transformateurs et des circuits associés 66
18 Endurance 66
19 Fonctionnement anormal 67
20 Stabilité et dangers mécaniques 69
21 Résistance mécanique 69
22 Construction 71
23 Conducteurs internes 78
24 Composants 78
25 Raccordement au réseau et câbles souples extérieurs 78
26 Bornes pour conducteurs externes 79
27 Dispositions en vue de la mise à la terre 79
28 Vis et connexions 79
29 Distances dans l'air, lignes de fuite et isolation solide 79
30 Résistance à la chaleur et au feu 79
31 Protection contre la rouille 79
32 Rayonnement, toxicité et dangers analogues 79
Annexes 85
Annexe A (informative) Essais individuels de série 86
Annexe B (normative) Appareils alimentés par batterie, batteries séparables et batteries amovibles pour appareils alimentés par batterie 88
Annexe R (normative) Évaluation des logiciels 89
Annexe AA (normative) Fours à micro-ondes combinés 90
Annexe BB (normative) Fours à micro-ondes destinés à être utilisés à bord de navires 93
Bibliographie 95

Figure 101 – Tige d'essai pour la dissimulation du verrouillage de porte 81
Figure 102 – Vacant..... 81
Figure 103 – Meuble d'essai avec planche de séparation, position de l'entonnoir et exemple de direction d'inclinaison..... 81
Figure 104 – Calibre pour le mesurage des températures de surface 82
Figure 105 – Vue de face de l'appareil avec identification des zones exclues 83
Figure 106 – Disposition du plan de travail pour l'essai de débordement d'un four à micro-ondes encastré 83
Figure 107 – Détail du bouchon de la bouteille et position du trou..... 84
Figure 108 – Bouteille remplie de la solution de débordement..... 84
Figure 109 – Position de la bouteille pour l'essai de débordement 84

Tableau 101 – Échauffements maximaux des surfaces accessibles extérieures en conditions de fonctionnement normal 63

COMMISSION ÉLECTROTECHNIQUE INTERNATIONALE

_____

APPAREILS ÉLECTRODOMESTIQUES ET ANALOGUES – SÉCURITÉ –

Partie 2-25: Exigences particulières pour les fours à micro-ondes, y compris les fours à micro-ondes combinés

AVANT-PROPOS

1) La Commission Électrotechnique Internationale (IEC) est une organisation mondiale de normalisation composée de l'ensemble des comités électrotechniques nationaux (Comités nationaux de l'IEC). L'IEC a pour objet de favoriser la coopération internationale pour toutes les questions de normalisation dans les domaines de l'électricité et de l'électronique. À cet effet, l'IEC – entre autres activités – publie des Normes internationales, des Spécifications techniques, des Rapports techniques, des Spécifications accessibles au public (PAS) et des Guides (ci-après dénommés "Publication(s) de l'IEC"). Leur élaboration est confiée à des comités d'études, aux travaux desquels tout Comité national intéressé par le sujet traité peut participer. Les organisations internationales, gouvernementales et non gouvernementales, en liaison avec l'IEC, participent également aux travaux. L'IEC collabore étroitement avec l'Organisation Internationale de Normalisation (ISO), selon des conditions fixées par accord entre les deux organisations.
2) Les décisions ou accords officiels de l'IEC concernant les questions techniques représentent, dans la mesure du possible, un accord international sur les sujets étudiés, étant donné que les Comités nationaux de l'IEC intéressés sont représentés dans chaque comité d'études.
3) Les Publications de l'IEC se présentent sous la forme de recommandations internationales et sont agréées comme telles par les Comités nationaux de l'IEC. Tous les efforts raisonnables sont entrepris afin que l'IEC s'assure de l'exactitude du contenu technique de ses publications; l'IEC ne peut pas être tenue responsable de l'éventuelle mauvaise utilisation ou interprétation qui en est faite par un quelconque utilisateur final.
4) Dans le but d'encourager l'uniformité internationale, les Comités nationaux de l'IEC s'engagent, dans toute la mesure possible, à appliquer de façon transparente les Publications de l'IEC dans leurs publications nationales et régionales. Toutes divergences entre toutes Publications de l'IEC et toutes publications nationales ou régionales correspondantes doivent être indiquées en termes clairs dans ces dernières.
5) L'IEC elle-même ne fournit aucune attestation de conformité. Des organismes de certification indépendants fournissent des services d'évaluation de conformité et, dans certains secteurs, accèdent aux marques de conformité de l'IEC. L'IEC n'est responsable d'aucun des services effectués par les organismes de certification indépendants.
6) Tous les utilisateurs doivent s'assurer qu'ils sont en possession de la dernière édition de cette publication.
7) Aucune responsabilité ne doit être imputée à l'IEC, à ses administrateurs, employés, auxiliaires ou mandataires, y compris ses experts particuliers et les membres de ses comités d'études et des Comités nationaux de l'IEC, pour tout préjudice causé en cas de dommages corporels et matériels, ou de tout autre dommage de quelque nature que ce soit, directe ou indirecte, ou pour supporter les coûts (y compris les frais de justice) et les dépenses découlant de la publication ou de l'utilisation de cette Publication de l'IEC ou de toute autre Publication de l'IEC, ou au crédit qui lui est accordé.
8) L'attention est attirée sur les références normatives citées dans cette publication. L'utilisation de publications référencées est obligatoire pour une application correcte de la présente publication.
9) L'IEC attire l'attention sur le fait que la mise en application du présent document peut entraîner l'utilisation d'un ou de plusieurs brevets. L'IEC ne prend pas position quant à la preuve, à la validité et à l'applicabilité de tout droit de brevet revendiqué à cet égard. À la date de publication du présent document, l'IEC n'avait pas reçu notification qu'un ou plusieurs brevets pouvaient être nécessaires à sa mise en application. Toutefois, il y a lieu d'avertir les responsables de la mise en application du présent document que des informations plus récentes sont susceptibles de figurer dans la base de données de brevets, disponible à l'adresse https://patents.iec.ch. L'IEC ne saurait être tenue pour responsable de ne pas avoir identifié de tels droits de brevets.

L'IEC 60335-2-25 a été établie par le sous-comité 61B: Sécurité des appareils à micro-ondes à usage domestique et commercial, du comité d'études 61 de l'IEC: Sécurité des appareils électrodomestiques et analogues. Il s'agit d'une Norme internationale.

Cette huitième édition annule et remplace la septième édition parue en 2020. Cette édition constitue une révision technique.

Cette édition inclut les modifications techniques majeures suivantes par rapport à l'édition précédente:

a) certains paragraphes ont été modifiés pour les socles femelles de connecteurs et les socles de prises de courant;
b) le 7.12 a été amélioré pour plus de clarté;
c) les 8.1.1 et 20.2 ont été modifiés afin d'utiliser le calibre d'essai 19;
d) les 10.1 et 10.2 ont été améliorés pour les fours à micro-ondes de type onduleur;
e) des valeurs d'échauffement maximales ont été ajoutées pour les surfaces accessibles extérieures en 11.8;
f) le critère d'essai a été modifié en 15.101;
g) le 15.102 a été modifié à des fins d'harmonisation avec l'IEC 60335-2-6;
h) les 8.1.3, 15.103, 19.11.2, 19.13, 22.105, 22.106, 22.111 et la Figure 101 ont été améliorés pour plus de clarté;
i) les 22.103.2, 22.105 et 22.120 ont été modifiés afin d'utiliser le calibre d'essai 18;
j) le 16.101 a été modifié de manière à déplacer le contenu du 16.101.1 et du 16.101.2 directement sous le 16.101;
k) le 22.119 a été modifié de manière à déplacer le contenu du 22.119.1, du 22.119.2 et du 22.119.3 directement sous le 22.119.

Le texte de cette Norme internationale est issu des documents suivants:

Projet	Rapport de vote
61B/701/FDIS	61B/705/RVD

Le rapport de vote indiqué dans le tableau ci-dessus donne toute information sur le vote ayant abouti à son approbation.

La version française de la norme n'a pas été soumise au vote.

La langue employée pour l'élaboration de cette Norme internationale est l'anglais.

Ce document a été rédigé selon les Directives ISO/IEC, Partie 2, il a été développé selon les Directives ISO/IEC, Partie 1 et les Directives ISO/IEC, Supplément IEC, disponibles sous www.iec.ch/members_experts/refdocs. Les principaux types de documents développés par l'IEC sont décrits plus en détail sous www.iec.ch/standardsdev/publications.

Une liste de toutes les parties de la série IEC 60335, publiées sous le titre général *Appareils électrodomestiques et analogues – Sécurité*, se trouve sur le site web de l'IEC.

La présente partie 2 doit être utilisée conjointement avec la dernière édition de l'IEC 60335-1 et ses amendements sauf si cette édition l'exclut. Dans ce cas, la dernière édition qui n'exclut pas la présente partie 2 est utilisée. Elle a été établie sur la base de la sixième édition (2020) de cette norme.

NOTE 1 L'expression "la Partie 1" utilisée dans la présente norme fait référence à l'IEC 60335-1.

La présente Partie 2 complète ou modifie les articles correspondants de l'IEC 60335-1, de façon à transformer cette publication en norme IEC: Exigences particulières pour les fours à micro-ondes, y compris les fours à micro-ondes combinés.

Lorsqu'un paragraphe particulier de la Partie 1 n'est pas mentionné dans cette Partie 2, ce paragraphe s'applique pour autant que cela soit raisonnable. Lorsque la présente norme mentionne "addition", "modification" ou "remplacement", le texte correspondant de la Partie 1 doit être adapté en conséquence.

NOTE 2 Le système de numérotation suivant est utilisé:

– les paragraphes, tableaux et figures qui s'ajoutent à ceux de la Partie 1 sont numérotés à partir de 101;

– à l'exception de celles qui sont dans un nouveau paragraphe ou de celles qui concernent des notes de la Partie 1, les notes sont numérotées à partir de 101, y compris celles des articles ou paragraphes qui sont remplacés;

– les annexes qui sont ajoutées sont désignées AA, BB, etc.

NOTE 3 Les caractères d'imprimerie suivants sont utilisés:

– exigences: caractères romains;

– *modalités d'essais: caractères italiques;*

– notes: petits caractères romains.

Les termes en **gras** dans le texte sont définis à l'Article 3. Lorsqu'une définition concerne un adjectif, l'adjectif et le nom associé figurent également en **gras**.

Le comité a décidé que le contenu de ce document ne sera pas modifié avant la date de stabilité indiquée sur le site web de l'IEC sous webstore.iec.ch dans les données relatives au document recherché. À cette date, le document sera

- reconduit,
- supprimé, ou
- révisé.

NOTE 4 L'attention des Comités nationaux est attirée sur le fait que les fabricants d'appareils et les organismes d'essai peuvent avoir besoin d'une période transitoire après la publication d'une nouvelle publication IEC, ou d'une publication amendée ou révisée, pour fabriquer des produits conformes aux nouvelles exigences et pour adapter leurs équipements aux nouveaux essais ou aux essais révisés.

Le comité recommande que le contenu de cette publication soit adopté pour application nationale (obligatoire) au plus tôt 12 mois et au plus tard 36 mois après la date de publication.

Les différences suivantes existent dans les pays indiqués ci-après.

– 5.3: Les fuites micro-ondes ne doivent pas dépasser 10 W/m^2 pendant l'essai initial (Japon et États-Unis).
– 6.1: Les fours à micro-ondes peuvent être de classe 0I si leur tension assignée ne dépasse pas 150 V (Japon).
– 7.12: Il existe des instructions particulières liées à l'utilisation et à la maintenance des **fours à micro-ondes** concernant le risque d'exposition à l'énergie micro-ondes (États-Unis).
– 7.12: Il est interdit de placer l'appareil dans un meuble qui comporte une porte (Japon).
– Article 18: L'essai est réalisé sur deux appareils (États-Unis).
– 19.11.2: La variation de tension absorbée n'est pas appliquée (États-Unis).
– 19.13: Les fuites micro-ondes sont mesurées seulement à l'issue de chaque essai (États-Unis).
– 21.102: La force appliquée est de 222 N (États-Unis).
– 21.105: Les fuites micro-ondes ne doivent pas dépasser 50 W/m^2 (Japon et États-Unis).
– 22.111: Les fuites micro-ondes sont mesurées seulement à l'issue de l'essai (États-Unis).
– 22.112: Les fuites micro-ondes ne doivent pas dépasser 50 W/m^2 (Japon et États-Unis).
– 22.115: Tout accès à la cavité doit être empêché (États-Unis).

INTRODUCTION

Il a été admis par hypothèse, en établissant la présente Norme internationale, que l'exécution de ses dispositions était confiée à des personnes expérimentées et ayant une qualification appropriée.

Les documents de recommandations concernant l'application des exigences de sécurité pour les appareils peuvent être consultés dans les documents de support du CE 61 et du SC 61B, accessibles sur le site web de l'IEC à l'adresse:

https://www.iec.ch/tc61/supportingdocuments
https://www.iec.ch/sc61b/supportingdocuments

Cette information est donnée à l'intention des utilisateurs de la présente Norme internationale et ne constitue nullement un remplacement du texte normatif de la présente norme.

La présente norme reconnaît le niveau de protection internationalement accepté contre les dangers électriques, mécaniques, thermiques, liés au feu et au rayonnement des appareils, lorsqu'ils fonctionnent comme en usage normal en tenant compte des instructions du fabricant. Elle couvre également les situations anormales auxquelles on peut s'attendre dans la pratique et elle tient compte de la façon dont les phénomènes électromagnétiques peuvent affecter le fonctionnement sûr des appareils.

Cette norme tient compte autant que possible des exigences de l'IEC 60364, de façon à rester compatible avec les règles d'installation quand l'appareil est raccordé au réseau d'alimentation. Cependant, des règles nationales d'installation peuvent être différentes.

Si un appareil relevant du domaine d'application de la présente norme comporte également des fonctions couvertes par une autre Partie 2 de l'IEC 60335, la Partie 2 correspondante est appliquée à chaque fonction séparément, dans la limite du raisonnable. Si cela s'applique, l'influence d'une fonction sur les autres fonctions est prise en compte.

Lorsqu'une Partie 2 ne comporte pas d'exigences complémentaires pour couvrir les risques traités dans la Partie 1, la Partie 1 s'applique.

NOTE 1 Cela signifie que les comités d'études responsables pour les Parties 2 ont déterminé qu'il n'était pas nécessaire de spécifier des exigences particulières pour l'appareil en question en plus des exigences générales.

Cette norme est une norme de famille de produits traitant de la sécurité d'appareils et a préséance sur les normes horizontales et génériques couvrant le même sujet.

NOTE 2 Les publications horizontales, les publications fondamentales de sécurité et les publications groupées de sécurité couvrant un danger ne s'appliquent pas, parce qu'elles ont été prises en considération lorsque les exigences générales et particulières ont été étudiées pour la série de normes IEC 60335.

Un appareil conforme au texte de la présente norme ne sera pas nécessairement jugé conforme aux principes de sécurité de la norme si, lorsqu'il est examiné et soumis aux essais, il apparaît qu'il présente d'autres caractéristiques qui compromettent le niveau de sécurité visé par ces exigences.

Un appareil utilisant des matériaux ou présentant des modes de construction différents de ceux décrits dans les exigences de cette norme peut être examiné et essayé en fonction de l'objectif poursuivi par ces exigences et, s'il est jugé pratiquement équivalent, il peut être estimé conforme aux principes de sécurité de la norme.

NOTE 3 Les normes traitant des aspects non relatifs à la sécurité des appareils électrodomestiques sont:

– les normes IEC publiées par le comité d'études 59 concernant les méthodes de mesure d'aptitude à la fonction;
– les normes CISPR 11 et CISPR 14-1, ainsi que les normes applicables de la série IEC 61000-3 concernant les émissions électromagnétiques;
– la norme CISPR 14-2 concernant l'immunité électromagnétique;
– les normes IEC publiées par le comité d'études 111 concernant l'environnement.

APPAREILS ÉLECTRODOMESTIQUES ET ANALOGUES – SÉCURITÉ –

Partie 2-25: Exigences particulières pour les fours à micro-ondes, y compris les fours à micro-ondes combinés

1 Domaine d'application

L'article de la Partie 1 est remplacé par le texte suivant.

La présente partie de l'IEC 60335 traite de la sécurité des **fours à micro-ondes** à usage domestique et analogue dont la **tension assignée** est inférieure ou égale à 250 V, y compris les appareils alimentés en courant continu (CC) et les **appareils alimentés par batteries**.

La présente norme traite également des **fours à micro-ondes combinés**, pour lesquels l'Annexe AA normative s'applique.

La présente norme traite également des **fours à micro-ondes** destinés à être utilisés à bord de navires, pour lesquels l'Annexe BB normative s'applique.

Les appareils non destinés à un usage domestique normal, mais qui peuvent néanmoins constituer une source de danger pour le public, tels que les appareils destinés à être utilisés par des utilisateurs non avertis dans des magasins, chez des artisans et dans des fermes, sont compris dans le domaine d'application de la présente norme. Toutefois, si l'appareil est destiné à être utilisé par des professionnels pour la préparation d'aliments à des fins commerciales, cet appareil n'est pas considéré comme étant destiné uniquement à un usage domestique et analogue.

Dans la mesure du possible, la présente norme traite des dangers courants que présentent les appareils et auxquels sont exposés tous les individus situés à l'intérieur et autour de l'habitation. Cependant, elle ne tient en général pas compte:

– des personnes (y compris des enfants) dont:
  - les capacités physiques, sensorielles ou mentales; ou
  - le manque d'expérience et de connaissance

  les empêchent d'utiliser l'appareil en toute sécurité sans surveillance ou instruction;
– des enfants qui jouent avec l'appareil.

L'attention est attirée sur le fait que

– pour les appareils destinés à être utilisés dans des véhicules ou à bord de navires ou d'avions, des exigences supplémentaires peuvent être nécessaires;
– dans de nombreux pays, des exigences supplémentaires sont spécifiées par les organismes nationaux de la santé, par les organismes nationaux responsables de la protection des travailleurs et par des organismes similaires.

La présente norme ne s'applique pas

– aux **fours à micro-ondes** à usage commercial (IEC 60335-2-90);
– aux appareils à micro-ondes commerciaux avec applicateurs à insertion ou à contact (IEC 60335-2-110);
– aux installations de chauffage industriel à hyperfréquences (IEC 60519-6);

– aux appareils destinés à des usages médicaux (IEC 60601);
– aux appareils destinés à être utilisés dans des locaux qui présentent des conditions particulières, telles que la présence d'une atmosphère corrosive ou explosive (poussière, vapeur ou gaz).

2 Références normatives

L'article de la Partie 1 s'applique, avec l'exception suivante.

Addition:

IEC 60068-2-6, *Essais d'environnement – Partie 2: Essais – Essai Fc: Vibrations (sinusoïdales)*

IEC 60068-2-27, *Essais d'environnement – Partie 2-27: Essais – Essai Ea et guide: Chocs*

IEC 60068-2-52, *Essais d'environnement – Partie 2-52: Essais – Essai Kb: Brouillard salin, essai cyclique (solution de chlorure de sodium)*

IEC 60335-2-6:— [1], *Appareils électrodomestiques et analogues – Sécurité – Partie 2-6: Exigences particulières pour les cuisinières, les tables de cuisson, les fours et les appareils fixes analogues*

IEC 60335-2-9, *Appareils électrodomestiques et analogues – Sécurité – Partie 2-9: Exigences particulières pour les grils, les grille-pain et les appareils de cuisson mobiles analogues*

IEC 60584-1, *Couples thermoélectriques – Partie 1: Spécifications et tolérances en matière de FEM*

[1] À l'étude. Stade au moment de la publication: IEC/FDIS 60335-2-6:2024.