

AS/NZS 60335.2.25:2020  
IEC 60335-2-25 Ed 7



Australian/New Zealand Standard™

# Household and similar electrical appliances — Safety

**Part 2.25: Particular requirements for microwave ovens, including combination microwave ovens**



AS/NZS 60335.2.25:2020

This Joint Australian/New Zealand Standard™ was prepared by Joint Technical Committee EL-002, Safety of Household and Similar Electrical Appliances and Small Power Transformers and Power Supplies. It was approved on behalf of the Council of Standards Australia on 8 December 2020 and by the New Zealand Standards Approval Board on 7 October 2020.

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The following are represented on Committee EL-002:

- Association of Accredited Certification Bodies
- Australian Industry Group
- Better Regulation Division (Fair Trading, Safework NSW, Testsafe)
- Business New Zealand
- Consumer Electronic Suppliers Association, Australia
- Consumers' Federation of Australia
- Electrical Regulatory Authorities, Australia
- Electrical consultants
- Engineers Australia
- JAS-ANZ
- National Retailers Association (Australia)
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This Standard was issued in draft form for comment as DR 20001.

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Australian/New Zealand Standard™

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## Part 2.25: Particular requirements for microwave ovens, including combination microwave ovens

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STANDARDS AUSTRALIA/STANDARDS NEW ZEALAND

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**AS/NZS 60335.2.25:2020**

**HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES –  
SAFETY –**

**Part 2.25: Particular requirements for microwave ovens,  
including combination microwave ovens**

**Foreword**

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee EL-002 - Safety of Household and Similar Electrical Appliances and Small Power Transformers to supersede AS/NZS 60335.2.25:2011 three years from the date of publication of this Standard. During this period AS/NZS 60335.2.25:2011 will also remain current. Regulatory authorities that reference this Standard in regulation may apply these requirements at a different time. Users of this Standard should consult with these authorities to confirm their requirements.

The objective of this Standard is to provide manufacturers, designers, regulatory authorities, testing laboratories and similar organizations with safety requirements designed to give the user protection against hazards that might occur during normal operation and abnormal operation of the appliance and which may be used as the basis for approval for sale or for connection to the electricity supply mains in Australia and New Zealand.

The text of IEC 60335-2-25 Ed 7, prepared by IEC Technical Subcommittee SC 61B, was submitted to the Standards Australia/Standards New Zealand Combined Procedure (dual public comment and committee vote) for adoption of the IEC standard as a Standards Australia/Standards New Zealand joint standard.

The principal changes in this edition as compared with the 2011 edition of AS/NZS 60335.2.25 are as follows (minor changes are not listed):

- aligns the text with AS/NZS 60335.1:2020;
- 11.7 and 19.13 are improved in clarity;
- in 19.102, a note is converted into normative text;
- 19.101 is improved with an alternative measurement method;
- 22.121 is improved with requirements for simultaneous activation of heating elements and motors;
- 15.2, 15.101, 21, 22.102, 22.112, 22.119, 22.120, 24.101 and 27.1 are improved in clarity;
- Annex A has editorial improvements and feasible limits of deviations.

This Standard is an adoption with national modifications of the seventh edition of IEC 60335-2-25, *Household and similar electrical appliances – Safety – Part 2-25: Particular requirements for microwave ovens, including combination microwave ovens*. It has been varied as indicated to take account of Australian and New Zealand conditions.

This part 2 has to be used in conjunction with the latest edition of AS/NZS 60335.1 *Household and similar electrical appliances – Safety – Part 1: General requirements* and its Amendments. It was established on the basis of AS/NZS 60335.1:2020.

This part 2 supplements or modifies the corresponding clauses of AS/NZS 60335.1 so as to convert it into the Australian/New Zealand Standard: Safety requirements for microwave ovens, including combination microwave ovens.

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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 of Part 1 is to be adapted accordingly.

NOTE 1 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.;
- figures, subclauses, notes and annexes that are additional to those in the IEC standard are prefixed with the letters AZ.

NOTE 2 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.

p NOTE 3 In this document, p is used in the margin to indicate instructions for preparing a consolidated version.

The essential safety requirements in AS/NZS 3820<sup>1</sup> that could be applicable to requirements for microwave ovens, including combination microwave ovens are covered by this standard.

The national variations to IEC 60335-2-25 Ed 7 form the Australian and New Zealand national variations for purposes of the IECEE scheme for recognition of results of testing to standards for safety of electrical equipment (the CB scheme).

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<sup>1</sup> AS/NZS 3820 *Essential safety requirements for electrical equipment*

The text of the International Standard IEC 60335-2-25 Ed 7 was approved as a joint Australia/New Zealand Standard with the agreed national variations as given below.

**AUSTRALIAN NATIONAL VARIATIONS**

There are no national variations to this Part 2 other than those listed in the national variations in AS/NZS 60335.1:2020.

**NEW ZEALAND NATIONAL VARIATIONS**

There are no national variations to this Part 2 other than those listed in the national variations in AS/NZS 60335.1:2020.

**Annex ANZ  
(normative)**  
**Normative references to international publications with their corresponding joint  
Australia/New Zealand publications**

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.

NOTE When an international publication has been modified by national variations the relevant joint Australia/New Zealand publications applies if the national variations are needed to ensure the safety of the appliance for Australia/New Zealand conditions. These international publications are indicated by (mod). If an international publication is not so indicated, then either it or the listed Australia/New Zealand publication may be used.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>AS/NZS</u>	<u>Year</u>
IEC 60068-2-6		<i>Environmental testing – Part 2-6: Tests – Test Fc: Vibration (sinusoidal)</i>		
IEC 60068-2-27		<i>Environmental testing – Part 2-27: Tests – Test Ea and guidance: Shock</i>		
IEC 60068-2-52		<i>Environmental testing – Part 2-52: Tests – Test Kb: Salt mist, cyclic (sodium chloride solution)</i>		
IEC 60335-2-5 (mod)	2012	<i>Household and similar electrical appliances – Safety – Part 2-5: Particular requirements for dishwashers</i>	60335.2.5	2014
IEC 60335-2-6 (mod)	2014	<i>Household and similar electrical appliances – Safety – Part 2-6: Particular requirements for stationary cooking ranges, hobs, ovens and similar appliances</i>	60335.2.6	2014
IEC 60335-2-9 (mod)		<i>Household and similar electrical appliances – Safety – Part 2-9: Particular requirements for grills, toasters and similar portable cooking appliances</i>	60335.2.9	



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

This seventh edition cancels and replaces the sixth edition published in 2010, Amendment 1:2014 and Amendment 2:2015. This edition constitutes a technical revision.

This edition includes the following significant changes with respect to the sixth edition:

- 11.7 and 19.13 are improved in clarity;
- in 19.102, a note is converted into normative text;
- 19.101 is improved with an alternative measurement method;
- 22.121 is improved with requirements for simultaneous activation of heating elements and motors;
- 15.2, 15.101, 21, 22.102, 22.112, 22.119, 22.120, 24.101 and 27.1 are improved in clarity;

– Annex A has editorial improvements and feasible limits of deviations.

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

CDV	RVC
61B/611/CDV	61B/626/RVC
61B/615/CDV	61B/627/RVC
61B/621/CDV	61B/628/RVC
61B/622/CDV	61B/629/RVC
61B/623/CDV	61B/630/RVC

Full information on the voting for the approval of this International 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.

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. It was established on the basis of the fifth edition (2010) 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 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.

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<sup>2</sup> 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<sup>2</sup> (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<sup>2</sup> (Japan and USA).
- 22.115: All access to the **cavity** has to be prevented (USA).

**IMPORTANT – The "colour inside" logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this publication using a colour printer.**

## 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.

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 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 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 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.

## 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.

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

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

Appliances not intended for normal household use but which nevertheless may 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 knowledgeprevents 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);
- 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*