

INTERNATIONAL STANDARD

AMENDMENT 2
AMENDEMENT 2

**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: Règles particulières pour les fours à micro-ondes, y compris les
fours à micro-ondes combinés**



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IEC Central Office
3, rue de Varembe
CH-1211 Geneva 20
Switzerland

Tel.: +41 22 919 02 11
Fax: +41 22 919 03 00
info@iec.ch
www.iec.ch

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FOREWORD

This amendment has been prepared by subcommittee SC61B: Safety of microwave appliances for household and commercial use, of IEC technical committee 61: Safety of household and similar electrical appliances.

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

FDIS	Report on voting
61B/537/FDIS	61B/540/RVD

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

The committee has decided that the contents of this amendment and the base publication will remain unchanged until the stability date indicated on the IEC web site under "<http://webstore.iec.ch>" in the data related to the specific publication. At this date, the publication will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

NOTE 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.

2 Normative references

Replace, in the existing reference to IEC 60335-2-6, "IEC 60335-2-6" by "IEC 60335-2-6:2014".

7 Marking and instructions

7.12

Addition:

Add, after the last dashed item, the following new dashed item:

- The appliance shall not be cleaned with a steam cleaner.

22 Construction

Addition:

Add, after the existing 22.118, the following new subclause:

22.119 Outer glass panels of microwave oven doors which break during the test of 21.104 and with an area having any two orthogonal dimensions exceeding 75 mm shall be made from

- glass that breaks into small pieces when it fractures; or
- glass that is not released or dropped from its normal position when broken; or
- glass with enhanced mechanical strength.

For glass that breaks into small pieces when it fractures, compliance is checked by the following test which is performed on two samples.

Frames or other parts attached to the glass panel to be tested are removed and the glass is placed on a rigid horizontal flat surface.

NOTE 1 The edges of the sample to be tested are contained within a frame of adhesive tape in such a manner that the broken pieces remain in place after breakage but without hindering expansion of the sample.

The sample under test is broken by means of a test punch having a head with a mass of 75 g ± 5 g and a conical tungsten carbide tip with an angle of 60° ± 2°. The punch shall be positioned approximately 13 mm in from the longest edge of the glass at the midpoint of that edge. The punch is then hit by a hammer so that the glass breaks.

A transparent mask of 50 mm × 50 mm is placed on the fractured glass except within a peripheral margin of 25 mm from the edge of the sample.

The assessment shall be undertaken on at least two areas of the sample, and the areas chosen shall contain the largest particles.

The number of crack free particles totally within the mask is counted and for each assessment shall not be less than 40. The particle count shall be made within 5 min of the fracture.

NOTE 2 In the case of curved glass, plane pieces of the same material can be used for the test.

For glass that is not released or dropped from its normal position when broken, compliance is checked by breaking the glass when mounted in its normal position in the appliance by means of a test punch having a head with a mass of 75 g ± 5 g and a conical tungsten carbide tip with an angle of 60° ± 2°. The punch shall be positioned approximately 13 mm in from the longest edge of the glass at the midpoint of that edge. The punch is then hit by a hammer so that the glass breaks.

At the conclusion of this test the glass shall not be broken or cracked such that pieces are released or dropped from their normal position. Glass that is released within the immediate vicinity of the punch tip as a result of the punch impacting the sample under test is ignored.

For glass with enhanced mechanical strength, compliance is checked by the pendulum hammer test Eha of IEC 60068-2-75.

For the test the glass panels are supported according to their method of incorporation in the appliance.

The test is performed with three blows applied at the most critical point on two samples, the impact energy of each blow shall be 5 J.

At the conclusion of the tests the glass shall not be broken or cracked.

Annex A (informative)

Routine tests

A.103 Microwave leakage

Replacement:

Replace the existing text of this subclause by the following new text:

The **microwave oven** is supplied at **rated voltage** and operated with the microwave power control adjusted to the highest setting. A load as specified in Clause 32 or a load with equal dielectric and thermal properties shall be used. The energy flux density of microwave leakage is measured at any point approximately 50 mm between the field sensor and the external surface of the appliance. The measuring instrument is moved over the external surface of the oven and the microwave leakage is measured.

The microwave leakage shall not exceed 50 W/m^2 , as recorded with an instrument fulfilling at least the specifications in A.104 regarding its accuracy.

Addition:

Add, after the existing A.103, the following new Clause:

A.104 Microwave leakage instrument minimum specifications

A.104.1 The following specification applies only for routine tests and may also apply for checks of **microwave ovens** after repair or servicing. Instruments for type testing shall fulfil more stringent requirements, which are obtained from National bodies responsible for protection against non-ionising radiation.

A.104.2 Instruments shall be subjected to regular calibration by carrying out the following tests, to ensure their accuracy is maintained. The tests for instrument compliance are made at room temperature. For carrying out the tests, the position of the field sensor shall be known and preferably be marked. In order to allow measurements specified in A.104.3 to A.104.5 the minimum resolution of the instrument under test shall be 1 W/m^2 .

A.104.3 The level calibrations are carried out either using a generator set-up in an anechoic chamber, or using a reference instrument in substitution mode. The far field shall be linearly polarized. The field sensor of the instrument under test (IUT) shall be placed at the position where the flux density is 10 W/m^2 or 50 W/m^2 , depending on the task. The range selector, if any, shall be set to the most appropriate range to measure a flux density of 10 W/m^2 or 50 W/m^2 , depending on the task and with a tolerance from -40% to $+60 \%$. The overall inaccuracy of the IUT shall be less than or equal to $\pm 1 \text{ dB}$ (i.e. from -21% to $+26 \%$) related to the average of minimum and maximum reading. The field sensor is positioned to the minimum reading and then rotated 4 times for 90° around its axis which is aligned to the propagation direction of the far field and directed towards the radiation source.

A.104.4 During the rotation in A.104.3 the maximum deviation of the IUT readings shall be less than or equal to $\pm 2 \text{ dB}$ (i.e. from -37% to $+58 \%$) related to the average of readings.

A.104.5 *The IUT field sensor is rotated for maximum reading as described in A.104.3 and then held in this position. The field sensor of an equal IUT is rotated as described in A.104.3 and slowly brought in close proximity of the field sensor of the static IUT. During the approach to 50 mm distance between the field sensors, the reading of the static IUT shall not change by more than ± 1 dB (i.e. from -21% to $+26\%$). During the test the axis of each field sensor has to be aligned to the propagation direction of the far field and each field sensor has to be directed towards the radiation source.*

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Withheld

Annex AA
(normative)

Combination microwave ovens

Add, after the existing 19.1, the following new clause:

22 Construction

Modification:

22.120 of IEC 60335-2-6:2014 is not applicable.



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Annex BB (normative)

Microwave ovens intended to be used on board ships

Addition:

Add, after the first paragraph of this annex, the following new note:

NOTE Where it is unclear whether a Clause or Subclause of this annex is intended to modify Part 1 or Part 2-25, this is specified.

7 Marking and instructions

Add, before the existing 7.12, the following new subclause:

7.1 Replacement:

Replace the second dashed item of Part 1 by the following:

- **rated frequency** or **rated frequency range** in Hz;

7.12 Addition:

Add, at the end of the existing text of this subclause of Part 2-25, the following new paragraphs:

The instructions for **microwave ovens** that are intended to be used on board ships shall state:

CAUTION: Verify that the voltage and frequency of the mains supply of the ship matches the **rated voltage** and **rated frequency** or **rated frequency range** of the **microwave oven**.

AVANT-PROPOS

Le présent amendement a été établi par le sous-comité SC61B: Sécurité des fours à micro-ondes à usage domestique et commercial, du comité d'études 61 de l'IEC: Sécurité des appareils électrodomestiques et analogues.

Le texte de cet amendement est issu des documents suivants:

FDIS	Rapport de vote
61B/537/FDIS	61B/540/RVD

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

Le comité a décidé que le contenu de cet amendement et de la publication de base ne sera pas modifié avant la date de stabilité indiquée sur le site web de l'IEC sous "http://webstore.iec.ch" dans les données relatives à la publication recherchée. A cette date, la publication sera

- reconduite,
- supprimée,
- remplacée par une édition révisée, ou
- amendée.

NOTE 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 entériné au niveau national au plus tôt 12 mois et au plus tard 36 mois après la date de publication.

2 Références normatives

Remplacer, dans la référence existante à l'IEC 60335-2-6, "IEC 60335-2-6" par "IEC 60335-2-6:2014".

7 Marquage et instructions

7.12

Addition:

Ajouter, à la suite du dernier tiret existant, le nouveau tiret suivant:

- L'appareil ne doit pas être nettoyé à la vapeur.