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# Australian Standard 3301-1980

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## APPROVAL AND TEST SPECIFICATION FOR PARTICULAR REQUIREMENTS FOR MICROWAVE OVENS



**PUBLISHED BY THE STANDARDS ASSOCIATION OF AUSTRALIA  
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*Incorporated by Royal Charter*

**THE FOLLOWING SCIENTIFIC, INDUSTRIAL AND GOVERNMENTAL organizations and departments were officially represented on the committee entrusted with the preparation of this specification:**

**Australian Chamber of Commerce  
Australian Electrical and Electronics Manufacturers Association  
Confederation of Australian Industry  
Electrical Apparatus Approvals Authorities  
Electrical Contractors Associations of Australia  
Electrical Testing Laboratories  
Electricity Supply Association of Australia  
Electronics Importers Association  
Commonwealth and State Health Departments**

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**This standard, prepared by Committee EL/2, Electrical Approvals Standards, was approved on behalf of the Council of the Standards Association of Australia on 25 August 1980, and was published on 1 November 1980.**

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**STANDARDS ASSOCIATION OF AUSTRALIA**  
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**AMENDMENT No 2**

to

**AS 3301—1980**

**Approval and Test Specification—**

**PARTICULAR REQUIREMENTS FOR MICROWAVE OVENS**

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**REVISED TEXT**

The 1980 edition of AS 3301 which was amended in 1982 is further amended as follows; the amendments should be inserted in the appropriate place.

*SUMMARY:* The following sections of the standard are covered by this amendment: Clauses 15 and 30.

Published on 3 March 1986.

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**Page 7. Clause 15.**

*Add* the following:

- (a) Clause 15.1, last paragraph is not required.
- (b) Clause 15.4 is not required.

This amendment forms part of the specification on publication.

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**Page 10. Clause 30.**

*Delete* Clause 30.101 and *substitute* the following:

**30.101.2 Glow-wire tip temperature and duration of test.**

Item (a)—replace 'As specified in the individual approval and test specification' with '850°C for 30 s'.

Item (b)—replace 'As specified in the individual approval and test specification' with '750°C for 30 s'.

This amendment forms part of the specification on publication.

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## PREFACE

This standard was prepared by the Association's Committee on Electrical Approvals Standards to supersede the 1978 edition.

It contains specific requirements for microwave ovens and is a supplementary specification to AS 3300, Approval and Test Specification for General Requirements for Household and Similar Electrical Appliances (which closely follows IEC 335-1).

The clauses of this standard supplement or modify the corresponding clauses in AS 3300. Where the reference in the text of this standard indicates an 'addition' or 'replacement' of the relevant requirements, tests or explanation notes of AS 3300, these changes are made to the relevant text which then become part of the standard. It will be observed that when no such change is necessary, the words 'this Clause of AS 3300 applies' are used.

This standard closely follows IEC 335-25, Particular Requirements for Microwave Cooking Appliances; however, some of the requirements of that publication have been modified to take account of local conditions. Where this standard deviates technically from the IEC document by way of additional or different requirements, the deviation is indicated by a rule in the margin against the clause, or part thereof, affected.

This edition is identical with the 1978 edition except for changes to the following clauses:

- Clause 29.1 contains an editorial correction.

- Clauses 32.1.1 and 32.9.3 introduce a measurement in parentheses to align with Appendix A.
- Clauses 32.9, 32.9.5, 32.9.6 and 32.9.7 have been altered to delete reference to alternative tests.
- Clause 32.10 introduces a note with regard to the use of carborundum stone as a dry load.
- Clause 32.11 has been corrected editorially.
- Clause 32.11.9 has been altered to clarify the requirement.
- Appendix B introduces information with regard to the use of metal foil containers in microwave ovens.

In this standard the requirements proper appear in 'normal' type and the test requirements appear in 'italic' type. Explanatory matters are contained in notes to the clauses.

This standard requires reference to the following approval and test specifications:

- AS 3300 General Requirements for Household and Similar Electrical Appliances
- AS 3159 Electronic Sound and Vision Equipment
- AS 3172 Electric Cooking Appliances for Household Use

and to AS 2064, Limits of Electromagnetic Interference Generated by Industrial, Scientific, Medical and Similar Radio-frequency Equipment.

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**STANDARDS ASSOCIATION OF AUSTRALIA**  
**Australian Standard**  
**APPROVAL AND TEST SPECIFICATION**  
**FOR**  
**PARTICULAR REQUIREMENTS**  
**FOR MICROWAVE OVENS**

## 1. SCOPE

This Clause of AS 3300 applies except as follows:

**REPLACEMENT.** Replace Clause 1.1 with the following:

**1.1 SCOPE AND APPLICATION.** This specification is applicable to microwave ovens using electromagnetic energy in one or more of the ISM bands above 300 MHz to heat food. These ovens are adapted to the household environment and may also use thermal cooking means as employed in conventional cooking ranges and ovens intended for household use.

Combination microwave ovens and microwave ovens provided with additional means for browning accomplished by radiant heating means shall also comply with the relevant clause of AS 3172.

**NOTES:**

1. The frequencies designated for ISM purposes in Australia are listed in Table 1 of AS 2064, Limits of Electromagnetic Interference Generated by Industrial, Scientific, Medical and Similar Radio-frequency Equipment. AS 2064 also states that the international bands  $433.92 \text{ MHz} \pm 0.2$  percent and  $915 \pm 25 \text{ MHz}$ , which are available for use in some countries, are not permitted to be used in Australia.
2. Unless otherwise specified, the input power comes from the supply source to the oven at a line-to-line voltage of 440 V or less, and for a line-to-neutral voltage of 250 V or less and a supply frequency of 50 Hz or 60 Hz.
3. The forms of microwave ovens include portable, stationary-combination, built-in and built-in combination.
4. Attention is drawn to the fact that Statutory Authorities other than Electrical Approvals Authorities may have requirements additional to those in this specification.

## 2. DEFINITIONS

This Clause of AS 3300 applies except as follows:

**REPLACEMENT.** Replace Clause 2.2.4 with the following:

**2.2.4 Rated input** denotes the sum of the rated inputs of all the individual units in the appliance which can be on at one time under the conditions of maximum total input.

**NOTE:** For the purpose of calculating the size of terminals and cables, a diversity factor of 0.75 is allowed on rated current as calculated from the rated input and the rated voltage if there are more than three heating units.

**REPLACEMENT.** Replace Clause 2.2.23 with the following:

**2.2.23 Portable microwave oven** denotes an appliance weighing 18 kg or less or an appliance which is equipped with wheels with the intention of providing means for moving the appliance from one place to another and which provides microwave heating in a

cavity with or without an additional browning function accomplished by other heating means.

**REPLACEMENT.** Replace Clause 2.2.25 with the following:

**2.2.25 Combination microwave oven** denotes an appliance which combines some or all of the thermal heating functions of conventional cooking ranges and ovens with microwave heating in a cavity with or without an additional browning function accomplished by other heating means.

**NOTE:** In addition to complying with this specification, combination microwave ovens must comply with AS 3172.

**REPLACEMENT.** Replace Clause 2.2.29 with the following:

**2.2.29 Conditions of adequate heat, discharge** denote that the microwave oven is operated under the following conditions:

- (a) Microwave ovens are operated at all microwave power levels provided with a water load of  $1000 \pm 50 \text{ mL}$  in a non-metallic vessel having a diameter of about 220 mm placed in the centre of the load-carrying surface provided by the manufacturer. The water shall contain approximately 1 percent sodium chloride (NaCl).
- (b) If a combination microwave oven is designed for simultaneous microwave and conventional cooking, it is operated in this manner, with the above water load and with the conventional cooking parts operated in accordance with manufacturer's recommendations and with AS 3172.

**ADDITIONS.** Add the following:

**2.2.101 Cavity** denotes the space enclosed by inner walls and door into which food is placed to be heated or cooked by microwave energy.

**2.2.102 Elastomers** denote a class of flexible rubber or plastic polymerized compounds used at door seams to reduce microwave energy leakage.

**2.2.103 Microwave enclosure** denotes inner oven walls, door, waveguide and radiation shielding around magnetron filament connections.

**2.2.104 Interlock** denotes a mechanical or electrical safety device or system, the function of which is to prohibit one class of events if another class of conditions does not exist; e.g. an interlock prohibits the operation of a microwave generator if the door to the cooking cavity is not closed.

**2.2.105 ISM band** denotes that portion of the frequency spectrum assigned by governmental agencies or established by international treaty for industrial, scientific and medical purposes.

These frequencies are used in microwave heating.