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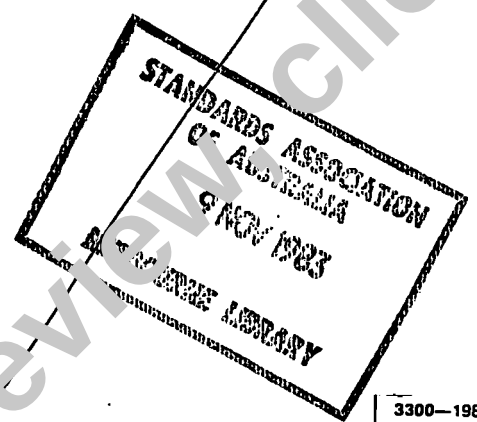
Amdt 1.
AMDT 2-9.5

APPROVAL AND TEST SPECIFICATION FOR GENERAL REQUIREMENTS FOR HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES



3300—1986 Approval and test specification—General requirements for household and similar electrical appliances
(In Update Service 28) A4 71pp *H*

Specifies general safety requirements for household and similar appliances. It is a base specification which, when combined with a particular specification in the AS 33— series, becomes a complete specification for an individual product. It is not normally used without a particular specification. Closely follows IEC 335-1 (2nd Edition) including amendments No 1 to No 4.

Committee EL/2. Supersedes AS 3300—1983: Publication date 1986-06-02: ISBN 0 7262 4205 5.

STANDARDS ASSOCIATION OF AUSTRALIA
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 standard:

Australian Chamber of Commerce

Australian Electrical and Electronics Manufacturers Association

Confederation of Australian Industry

Consumer Electronics Supplier's Association

Electrical Apparatus Approvals Authorities

Electrical Contractors Associations of Australia

Electrical Testing Laboratories

Electricity Supply Association of Australia

This standard, prepared by Committee EL/2, Electrical Appr[illegible]als Standards, was approved on behalf of the Council of the Standar[illegible] Association of Australia on 21 July and published on 4 November 1983.

Review of Australian Standards. To [illegible] abreast of progress in industry, Australian standards are subject to periodic review and are kept [illegible] date by the issue of amendments or new editions as necessary. It is important therefore that st[illegible]dar[illegible]us[illegible]s ensure that they are in possession of the latest edition, and any amendments thereto.

Full details of all SAA publ[illegible]ations will be found in the Annual List of Australian Standards; this information is supplemented each m[illegible]nth by SAA's journal 'The Australian Standard', which subscribing members receive, and which gives [illegible] of new publications, new editions and amendments, and of withdrawn standards.

Suggestions for im[illegible]ver[illegible]ents to Australian standards, addressed to the head office of the Association, are welcomed. Not[illegible]cat[illegible] of any inaccuracy or ambiguity found in an Australian standard should be made without delay in order that the matter may be investigated and appropriate action taken.

STANDARDS ASSOCIATION OF AUSTRALIA
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AMENDMENT No 2
to
AS 3300—1983
Approval and Test Specification for
GENERAL REQUIREMENTS FOR HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES

REVISED TEXT

The 1983 edition of AS 3300 which was amended in October 1984 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 2.2.10, 2.5.6, 30.101.

Published on 4 April 1985.

AMDT No 2 APRIL 1985 **Page 6. Clause 2.2.10.**

Delete item (c) and *substitute* the following:

(c) Type Y attachment which denotes a method of attachment such that access to terminations can only be gained with the aid of special purpose tools normally available only to the manufacturer or his agents.

This amendment forms part of the specification on publication.

AMDT No 2 APRIL 1985 **Page 39. Clause 25.6.**

Eighth paragraph—first line—

Add 'Type M', between the words 'Where' and 'Type Y'.

This amendment forms part of the specification on publication.

AMDT No 2 APRIL 1985 **Page 51. Clause 30.101.**

Delete Clause 30.101 and *substitute* the following:

30.101 SOLID INSULATING MATERIALS AND NON-METALLIC ENCLOSURES.

30.101.1 *General requirements.* Parts of non-metallic material other than—

(a) printed circuit boards

(b) decorative trims, wiring insulation, knobs and other small parts unlikely to be ignited or to propagate flames originating from inside the appliance,

shall be subjected to the glow-wire test specified in AS 2420 and the results determined in accordance with the provisions of that standard.

For equipment not covered by individual approval and test specifications the test temperature and duration of test shall be determined by the Approvals Authority in consultation with the submitter, account being taken of the guidelines set down in AS 2420.

NOTES:

1. In general, the glow-wire tip temperature for connections for hand-held appliances is 550°C, for other attended appliances is 750°C, and unattended appliances is 850°C.
2. The needle flame test may be applied to the enclosure of the equipment as the first test if agreement is reached between the Approvals Authority and the applicant. However the following should be noted:
   (a) The needle flame test shall be applied, where possible, from the inside of the enclosure on parts likely to be ignited by the tests when conducted in accordance with the provisions of items (a) and (b) of Clause 30.101.2.
   (b) The equipment should be examined to assess whether any flames occurring within the appliance would not be likely to ignite the external enclosure or any burning droplets would escape through opening[s] [such] [as] vent holes or ignite other materials in a manner that may lead to a failure of the device.
3. A component, which has complied when tested to the appropriate individual approval and test specification need not be retested unless the application of the component within an appliance, or more stringent requirements of the appliance specification so require.
4. A flow chart for guidance on the application of the glow-wire test and needle flame test is under consideration.

30.101.2 *Glow-wire tip temperature and duration of test.* The temperature of the glow-wire tip and duration of the test shall be:

(a) As specified in the individual approval and test specification, for insulating material that retains in position connections carrying a current greater than 0.5 A., and which may create a fire hazard in the event of a failure.

NOTES:

1. The individual approval and test specification should indicate conditions under which the above current is measured if other than during the normal temperature rise test. It may also indicate a variation in the amplitude of current if required by that specification.
2. An example of connections that, in the event of a failure, may create a fire hazard is screw connections that may be made or remade during *installation* or *user* servicing of the appliance.
3. Examples of connections that are not normally considered to be a fire hazard are quick connects, crimped or soldered connections.
4. If insulating material retaining connections in position is not tested under item (a) it should be tested under item (b).

(b) As specified in the individual approval and test specification for—

   (i) insulating material retaining live parts in position other than those tested in (a) above;

   (ii) barriers which prevent any flames produced during the tests conducted in accordance with the provisions of items (a) and (b)(i) from contacting other non-metallic material; and

   (iii) non-metallic parts (including external enclosures) that are unprotected by a barrier and are contacted by any flame produced when the tests are conducted in accordance with the provisions of items (a), (b)(i) or (b)(ii).

(c) 550°C for 30 s for—

   (i) non-metallic parts (including external enclosures) which are—

      (A) effectively separated from ignition sources by a barrier which passes the test

conducted in accordance with the provisions specified in item (b) above; or

(B) not contacted by any flame produced when the tests are conducted in accordance with the provisions of items (a) or (b) above and not exposed to burning droplets or glowing particles;

(ii) non-metallic enclosures which only enclose approved insulated wiring.

(iii) all other non-metallic material.

NOTE: The majority of thermoplastic materials are capable of complying with the 550°C glow-wire test. Consequently, when the material is adequately specified this test may be waived at the discretion of the Approvals Authority.

30.101.3 *Compliance.* In addition to the requirements of Section 2 of AS 2420, the complete product has failed to comply with the tests of Clause 30.101.1, if—

(i) burning droplets or glowing particles escape from the equipment and ignite the tissue paper or scorch the particle board underlay beneath the specimen;

(ii) the external enclosure ignites and fails to extinguish within the prescribed time when the tests are conducted in accordance with the provisions of items (a) or (b) of Clause 30.101.2 above; or

(iii) Any failure occurs when the tests are conducted in accordance with the provisions of item (c) of Clause 30.101.2 above.

Other failures recorded when the tests are conducted in accordance with the provisions of items (a) or (b) of Clause 30.101.2 above shall require the equipment to be subjected to the needle flame test specified in AS 2420 and results determined in accordance with the provisions of that standard. The needle flame test is applied for 30 seconds to all parts of non-metallic material (including barriers and enclosures) that are likely to be ignited by and are positioned within a distance of 50 mm of those parts which originally failed the glow-wire test. In addition the needle flame test is also applied to those parts outside the 50 mm specified above which were contacted by the flame or subjected to burning droplets or glowing particles as a result of a failure when the tests were conducted in accordance with the provisions of items (a) or (b) of Clause 30.101.2 above.

If a specimen passes the needle flame test it is deemed to comply with the requirements of this clause.

Nevertheless if a failure occurs during—

(i) the needle flame test; or

(ii) the glow-wire test when conducted in accordance with the provisions of item (c) of Clause 30.101.2 above,

the test may be repeated on two further specimens, both of which shall pass the test for compliance with this clause.

This amendment forms part of the specification on publication.

Page 60. Clause B30.101. AMDT No 2 APRIL 1985

Add the following as Notes 3 and 4.

3. If the size of the PCB is such that it is not possible to apply the flame as required in (i) above, the test should be conducted on the complete PCB.
4. If evidence is provided that a PCB, together with any coating has been given a rating of V_o when tested to UL 94 or equivalent requirements, this test may be waived at the discretion of the Approvals Authority.

This amendment forms part of the specification on publication.

STANDARDS ASSOCIATION OF AUSTRALIA
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AMENDMENT No 1
to
AS 3300—1983
Approval and Test Specification for
GENERAL REQUIREMENTS FOR HOUSHOLD AND SIMILAR ELECTRICAL APPLIANCES

REVISED TEXT

The 1983 edition of AS 3300 is amended as follows; the amendments sh\ 'd b\ nserted in the appropriate place.

SUMMARY: The following section of the standard is covered by t\ ' ' ndment: Clauses 24.101.

Published on 5 October 1984.

Page 38. Clause 24.101.

AMDT No 1 OCT. 1984

Add the following new clause:

24.101 ELECTRONIC REGULATI\ ' DEVICES AND SWITCHES. Electronic thermostats and electronic switches without a mechanical switch in the main circuit may not provide re!'able off-state. Therefore the circuit on the load side shall be consider\ ' be live.

This amendment forms p\ ' t \ ' he specification on publication.

AUSTRALIAN STANDARD

APPROVAL AND TEST SPECIFICATION FOR GENERAL REQUIREMENTS FOR HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES

AS 3300--1983

First published 1978
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PREFACE

This standard was prepared by the Association's Committee on Electrical Approvals Standards and supersedes AS 3300—1980. It is the basic or parent specification of a new series of Australian specifications that will ultimately replace those existing approval and test specifications dealing with household and similar electrical appliances; the new specifications will be issued progressively and will need to be read in conjunction with this standard. (See Introduction to SAA approval and test specifications herein.) The new series is based on a similar series of specifications issued by the International Electrotechnical Commission (IEC).

It is intended that a number of other basic specifications will be prepared to cover items of electrical equipment other than appliances, such as accessories, wiring equipment, control devices, protective devices, electronic equipment, isolating transformers, etc. These basic specifications, together with the particular specifications related to them, will eventually supersede the existing AS 3100, Approval and Test Specification for Definitions and General Requirements for Electrical Materials and Equipment, and the series of particular specifications in the AS 3101 to AS 3199 groups which currently are related to AS 3100. It is expected that AS 3100 will be in use for a considerable period of time whilst it is referred to by any existing particular specification or is otherwise required.

The existing basic specification AS 3100 includes general requirements applicable to all appliances and the related particular specifications contain additional requirements for each appliance or group of appliances. In the new series, the basic specification AS 3300 contains a wide range of requirements, all of which may not necessarily be applicable to a particular appliance. A particular specification in the new series converts AS 3300 into the specification for the type of appliance being considered; it does this by indicating, clause by clause, whether or not the requirements and test methods are applicable in whole or in part or whether they should be replaced, modified or supplemented.

Whereas AS 3100 may be satisfactorily used as a specification for an appliance for which there is no particular specification related to AS 3100, it is not practicable to use AS 3300 in a similar manner. It may however be used as a guide by taking into account particular specifications related to AS 3300 for similar equipment.

Where a particular specification related to AS 3300 is published for an appliance covered by an existing particular specification related to AS 3100, the existing specification will not be withdrawn for a period of approximately two years following publication of the new specification. Until such time as a new series specification is issued, the existing particular specification related to AS 3100 will apply; however, during the 2-year period before withdrawal of an existing particular specification when two specifications are concurrent for the same appliance, it is anticipated that regulatory authorities will approve appliances to either specification.

While this standard closely follows the IEC 335-1 (2nd Edition including Amendment No 3), Safety of Household and Similar Electrical Appliances—General Requirements, 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 letter in the margin against the clause, or part thereof affected. A list of deviations is included in an annex to this standard.

The changes in this edition comprise the incorporation of Amendments No 1 to No 5 to the 1980 edition and the amendments resulting from Amendment No 3 to IEC 335-1.

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, in a smaller size of the 'normal' type.

This standard requires reference to the existing SAA approval and test specifications (see list following 'Introduction to SAA approval and test specifications') and to the following Australian and British standards:

AS 1279	Copper Refinery Shapes
AS 1566	Copper and Copper Alloy Plate, Rolled Bar, Sheet, Strip and Foil for General Engineering Purposes
AS 1931	High Voltage Testing Techniques
AS 1939	Classification of Degrees of Protection Provided by Enclosures for Electrical Equipment
BS 5267	A.C. Motor Capacitors

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STANDARDS ASSOCIATION OF AUSTRALIA

Australian Standard
APPROVAL AND TEST SPECIFICATION FOR GENERAL REQUIREMENTS FOR HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES

1. SCOPE

1.1 SCOPE AND APPLICATION. This specification applies to electric heating appliances and electric motor-operated or magnetically-driven appliances for household and similar purposes.

NOTES:
1. 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 specification. Examples of such appliances are appliances for hairdressers, soldering irons, glue pots, sterilizers, infrared radiation appliances, feed boilers, water pumps and lawn mowers.
2. Except in so far as this specification deals with electric toys, it does not take into account the special hazards which exist in nurseries and other places where there are young children or aged or infirm persons without supervision; in such cases, additional requirements may be necessary.
3. This specification does not apply to—
   (a) electronic sound and vision equipment (see AS 3159 & AS 3250);
   (b) electromedical equipment;
   (c) wires and cables; and
   (d) accessories.

1.2 INTERFERENCE SUPPRESSION. This specification is concerned with safety and takes into account the influence on safety of components necessary to achieve a required degree of radio and television interference suppression.

2. DEFINITIONS

2.1 GENERAL. Where the terms 'voltage' and 'current' are used, they imply r.m.s. values, unless otherwise specified. Where the term 'motor' is used, it includes magnetic drive units.

2.2 SPECIFIC DEFINITIONS.

2.2.1 Rated voltage denotes the voltage (for three-phase supply, the voltage between phases) assigned to the appliance by the maker.

2.2.2 Rated voltage range denotes the voltage range assigned to the appliance by the maker, expressed by its lower and upper limits.

2.2.3 Working voltage denotes the maximum voltage to which the part under consideration can be subjected when the appliance is operating at its rated voltage and under normal conditions of use.

NOTES:
1. Normal conditions of use include changes of voltage within the appliance imposed by likely occurrences such as the operation of a circuit-breaker or the failure of a lamp.
2. When deducing the working voltage, the effect of possible transient voltages on the supply mains is ignored.

2.2.4 Rated input denotes the input under conditions of adequate heat discharge or under normal load and at normal operating temperature, assigned to the appliance by the maker.

2.2.5 Rated current denotes the current assigned to the appliance by the maker.

NOTE: If no current is assigned to the appliance, the rated current for the purpose of this specification is determined by calculation from the rated input and the rated voltage and or by measuring the current when the appliance is operating at rated voltage under normal load and at normal operating temperature.

2.2.6 Rated frequency denotes the frequency assigned to the appliance by the maker.

2.2.7 Rated frequency range denotes the frequency range assigned to the appliance by the maker, expressed by its lower and upper limits.

2.2.8 Rated capacity for appliances with a liquid container denotes the quantity of liquid for which the appliance is designed.

2.2.9 Detachable flexible cable or cord denotes a flexible cable or cord, for supply or other purposes, intended to be connected to the appliance by means of a suitable appliance coupler.

2.2.10 Power supply cord denotes a flexible cable or cord, for supply purposes, fixed to, or assembled with, the appliance according to one of the following methods:

(a) **Type X attachment** which denotes a method of attachment such that the flexible cable or cord can easily be replaced, without the aid of special purpose tools, by a flexible cable or cord not requiring any special preparation.

(b) **Type M attachment** which denotes a method of attachment such that the flexible cable or cord can easily be replaced, without the aid of special tools, by a special cable or cord with, for example, a moulded-on cord guard or pre-prepared method of termination.

(c) **Type Y attachment** which denotes a method of attachment such that the flexible cable or cord can only be replaced with the aid of special purpose tools normally available only to the manufacturer or his agents.

NOTE: Type Y attachments may be used either with common flexible cables or cords or with special cables or cords.

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(d) **Type Z attachment** which denotes a method of attachment such that the flexible cable or cord cannot be replaced without breaking or destroying a part of the appliance.

NOTE: Mouse-trap terminals are considered suitable for Type Y and Type Z attachments only.