

Australian/New Zealand Standard™

Approval and test specification— General requirements for electrical equipment



AS/NZS 3100:2002

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. It was approved on behalf of the Council of Standards Australia on 7 May 2002 and on behalf of the Council of Standards New Zealand on 21 March 2002.

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The following are represented on Committee EL-002:

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Australian Chamber of Commerce and Industry
Australian Electrical and Electronic Manufacturers Association
Canterbury Manufacturers Association New Zealand
Consumer Electronic Suppliers Association, Australia
Electrical Regulatory Authorities, Australia
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Electricity Supply Association of Australia
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Metal trade Industries Association of Australia
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Australian/New Zealand Standard™

Approval and test specification— General requirements for electrical equipment

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PREFACE

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 3100:1997 from the date of publication.

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This Standard incorporates Amendment No. 1 (November 2003), Amendment No. 2 (July 2004) and Amendment No. 3 (November 2005). The changes required by the Amendments are indicated in the text by a marginal bar and amendment number against the clause, note, table, figure or part thereof affected.

This Standard is one of a series of Approval and Test Specifications issued by Standards Australia and Standards New Zealand. These Standards are to be read in conjunction with This Standard is one of a series of Approval and test specifications issued by Standards Australia and Standards New Zealand, whose objective is to provide manufacturers and regulatory bodies with safety requirements for equipment not covered by AS/NZS 3350.1 or AS/NZS 60335.1, and that is designed to give the user protection against hazards that might occur during normal operation and abnormal operation of the equipment, and which may be used as the basis for approval for sale or for connection to supply in Australia and New Zealand.

This Standard contains general requirements for electrical equipment and can be applied to equipment for which no particular Approval and test specification exists. It also forms the basis of general requirements where an Approval and test specification exists for a piece of equipment. Only safety matters and related conditions are covered.

This Standard was revised to incorporate Amendments No's 1, 2, 3, 4, 5 and 6 and to effect changes to clause B3.3 that were issued in draft form for comment as document DR 01968. Editorial changes have also been incorporated.

For appliances, where conflict or uncertainty arises between the requirements detailed in this Standard and those detailed in AS/NZS 3350.1, those in AS/NZS 3350.1 shall take precedence. Where an interpretation of the requirements in AS/NZS 3100 is needed, the interpretation made shall be based upon the requirements detailed in AS/NZS 3350.1.

Annex A of this Standard contains fire hazard test requirements for equipment that is not designated as 'attended' or 'unattended'.

The terms 'normative' and 'informative' have been used in this Standard to define the application of the Annex to which they apply. A 'normative' Annex is an integral part of a Standard, whereas an 'informative' Annex is only for information and guidance

Standards Australia/Standards New Zealand

Approval and test specification – General requirements for electrical equipment

SECTION 1: SCOPE, APPLICATION AND REFERENCED DOCUMENTS

1.1 Scope

This Standard specifies the general safety requirements for, or with respect to, equipment (including fittings, accessories, appliances and apparatus) of classes and types that are used in, or intended for use in, or in connection with, electrical installations in buildings, structures, and premises. It is not applicable to an appliance within the scope of either AS/NZS 3350.1 or AS/NZS 60335.1 or a part 2 of either of these two standards, except where an approval and test specification makes reference to this standard.

Guidelines covering design and testing of electrical equipment to ensure safety and protection against electric shock, including the principles and application of double insulation, are contained in Annex D. Users of this Standard may find it helpful to study Annex D before reading the main body of this Standard.

1.2 Application

As and when an individual Standard dealing with specific features of the design and construction, and the testing, of any particular class or type of equipment is issued, it shall supersede those general requirements of this Standard that are specifically dealt with in those individual Standards.

Any material, fitting, cable, accessory, appliance or apparatus used in, or in connection with, an electrical installation shall comply with the appropriate individual Standard. In the absence of any such Standard, the appropriate provisions of this Standard shall apply.

NOTE Where an individual Standard makes reference to the appropriate clauses of this Standard, it is taken to mean that Clauses 3, 4, 5, 6.1, 6.2, 6.3, 7 and 8.15.8 of this Standard are applicable to the individual Standard. The remaining tests of Clause 8 are only applicable if referred to by Clauses 3, 4, 5, 6.1, 6.2, 6.3 or 7 of this Standard or if directly referred to in the individual Standard.

Should any requirement of an individual Standard differ from any of the general requirements of this Standard, the requirement of the individual standard shall prevail.

Where the words 'National Wiring Rules' have been used throughout the text of this Standard, it shall be taken to mean AS/NZS 3000.

1.3 Referenced documents

The following documents are referred to in this Standard:

NOTE Where no relevant joint Australia/New Zealand Standard is listed, the referenced Australian Standard is deemed to be appropriate for the purpose of this Standard.

Standards

AS

1834.1 Material for soldering – Solder alloys

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- 1834.2 Material for soldering – Flux-cored solders
- 1931.1 High voltage test techniques – General definitions and test requirements
- 1931.2 High voltage test techniques – Measuring systems
- 2768 Electrical insulating materials – Evaluation and classification based on thermal endurance
- 60068.2.75 Environmental testing – Tests – Test Eh – Hammer tests
- 60529 Degrees of protection provided by enclosures (IP Code)

AS/NZS

- 1020 The control of undesirable static electricity
- 1125 Conductors in insulated electric cables and flexible cords
- 3000 Electrical installations (known as the Australian/New Zealand Wiring Rules)
- 3350.1 Safety of household and similar electrical appliances – Part 1: General requirements
- 4695.2.2 Fire hazard testing of electrotechnical products - Test methods - Needle-flame test

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- 60065 Audio, video and similar electronic apparatus – Safety requirements

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- 60112 Method for the determination of the proof and the comparative tracking indices of solid insulating materials

- 60335.1 Household and similar electrical appliances – Safety – Part 1: General requirements

- 60695.2.10 Fire hazard testing – Glowing/hot wire based test methods -Glow-wire apparatus and common test procedure

- 60695.2.11 Fire hazard testing – Glowing/hot wire based test methods -Glow-wire flammability test method for end - products

- 60695.2.12 Fire hazard testing – Glowing/hot wire based test methods - Glow-wire flammability test method for materials

- 60695.2.13 Fire hazard testing – Glowing/hot wire based test methods - Glow-wire ignitability test method for materials

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- 60695.11.10 Fire hazard testing – Part 11.10: Test flames – 50 W horizontal and vertical flame method

- 60990 Methods of measurement of touch current and protective conductor current

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61558.2.6 Safety of power transformers, power supply units and similar – Particular requirements for safety isolating transformers for general use

IEC

60252-1 A.C. motor capacitors – Part 1: General – Performance testing and rating – Safety requirements – Guide for installation and operation

UL

746C Polymeric materials – Use in Electrical Equipment Evaluations

Approval and test specifications

AS

3158 Electric cables – Glass fibre insulated for working voltages up to and including 0.6/1 kV

AS/NZS

3112 Plugs and socket-outlets

3122 Socket-outlet adaptors

3133 Air break switches

3191 Electric flexible cords

SECTION 2: DEFINITIONS

2.1 General

For the purpose of this Standard, the definitions below apply.

NOTE Where the terms 'voltage' and 'current' are used, they imply r.m.s. values unless otherwise specified.

2.1.1

Accessory

any device such as a switch, fuse, plug, socket-outlet, lampholder, fitting, adaptor, or ceiling rose, which is associated with wiring, luminaires, switchboards or appliances; but not including the lamps, luminaires, appliances or switchboards themselves.

2.1.2

Active (or active conductor)

any one of those conductors of a supply system, which is maintained at a difference of potential from the neutral or earthing conductor. In a system that does not include a neutral or earthing conductor, all conductors are considered to be active conductors.

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