AS/NZS 3100:2009
(Incorporating Amendment Nos 1, 2, 3 and 4)

Australian/New Zealand Standard™

Approval and test specification—General requirements for electrical equipment

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 9 September 2009 and on behalf of the Council of Standards New Zealand on 28 August 2009.
This Standard was published on 30 October 2009.

The following are represented on Committee EL-002:

Australian Industry Group
A3 | National Retailers Association (Australia)
Business New Zealand
Consumer Electronic Suppliers Association, Australia
Consumers' Federation of Australia
Electrical regulatory authorities, Australia
Electrical Compliance Testing Association
Electrical consultants
Engineers Australia
A4 | JAS-ANZ
A3 | Testing Interests New Zealand
WorkSafe New Zealand
New Zealand Electric Fence Energizer Manufacturers' Standards Group

---

Keeping Standards up-to-date

Standards are living documents which reflect progress in science, technology and systems. To maintain their currency, all Standards are periodically reviewed, and new editions are published. Between editions, amendments may be issued. Standards may also be withdrawn. It is important that readers assure themselves they are using a current Standard, which should include any amendments which may have been published since the Standard was purchased.

Detailed information about joint Australian/New Zealand Standards can be found by visiting the Standards Web Shop at www.saiglobal.com.au or Standards New Zealand web site at www.standards.co.nz and looking up the relevant Standard in the on-line catalogue.

For more frequent listings or notification of revisions, amendments and withdrawals, Standards Australia and Standards New Zealand offer a number of update options. For information about these services, users should contact their respective national Standards organization.

We also welcome suggestions for improvement in our Standards, and especially encourage readers to notify us immediately of any apparent inaccuracies or ambiguities. Please address your comments to the Chief Executive of either Standards Australia or Standards New Zealand at the address shown on the back cover.

This Standard was issued in draft form for comment as DR 09908.

AS/NZS 3100:2009
(Incorporating Amendment Nos 1, 2, 3 and 4)

Australian/New Zealand Standard™

Approval and test specification—General requirements for electrical equipment

Originated in Australia as C 100—1937.
Final Australian edition AS 3100—1994.
Originated in New Zealand as NZSS 1300:1965.
Final New Zealand edition NZS 6200:1988.
Jointly revised and designated AS/NZS 3100:1997.
Second edition AS/NZS 3100:2002.
Third edition AS/NZS 3100:2009.
Reissued incorporating Amendment No. 1 (October 2010).
Reissued incorporating Amendment No. 2 (October 2012).
Reissued incorporating Amendment No. 3 (June 2014).
Reissued incorporating Amendment No. 4 (July2015).

Jointly published by SAI Global Limited under licence from Standards Australia Limited, GPO Box 476, Sydney, NSW 2001 and by Standards New Zealand, Private Bag 2439, Wellington 6140.

CONTENTS

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 3100:2002 from the date of publication.

A4 This Standard incorporates Amendment No. 1 (October 2010), Amendment No. 2 (October 2012) and Amendment No. 3 (June 2014) that was issued in draft form for comment as document DR 13916 and Correction Amendment 4 (July 2015). The changes required by the amendment are indicated in the text by a marginal bar and amendment number against the clause, note, table, figure or part thereof affected. Where an application date other than immediate is applicable to an amendment the date of application (DOA) is indicated by the marginal bar.

A4 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 minimum safety requirements for equipment not covered by other standards. This standard 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.

A1 This Standard was revised to incorporate Amendments No's 1, 2, and 3 and to effect changes to clauses 8.1, 8.3.1 and 8.4.5 that were issued in draft form for comment as document DR 09908. 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 60335.1, those in AS/NZS 60335.1 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 60335.1.

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 AS/NZS 60335.1 or a part 2 of this standard, 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

	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
	60068.2.75	Environmental testing – Tests – Test Eh – Hammer tests
A3 DOA 27/6/16	60127-1:2006	Miniature fuses - Part 1: Definitions for miniature fuses and general requirements for miniature fuse-links
	60529	Degrees of protection provided by enclosures (IP Code)
A3 DOA 27/6/16	61051-2	Varistors for use in electronic equipment - Part 2: Sectional specification for surge suppression varistors
	62368-1:2010	Audio/video, information and communication technology equipment - Part 1: Safety requirements

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)
60065	Audio, video and similar electronic apparatus – Safety requirements
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
60695.11.5	Fire hazard testing – Part 11.5: Test flames – Needle-flame test method – Apparatus, confirmatory test arrangement and guidance
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

A2 | 61558.2.6 Safety of transformers, reactors, power supply units and similar products for supply voltages up to 1 100 V - Part 2.6: Particular requirements and tests for safety isolating transformers and power supply units incorporating safety isolating transformers

IEC

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

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

A1 | 60384-14:2005 *Fixed capacitors for use in electronic equipment – Part 14: Sectional specification: Fixed capacitors for electromagnetic interference suppression and connection to the supply mains*

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.