

Australian/New Zealand Standard™

**Essential safety requirements for
electrical equipment**



AS/NZS 3820:2020

This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee QR-012, Conformance Marking to Regulatory Requirements. It was approved on behalf of the Council of Standards Australia on 22 June 2020 and by the New Zealand Standards Approval Board on 3 June 2020. This Standard was published on 26 June 2020.

The following are represented on Committee QR-012:

Australian Industry Group
Australian Information Industry Association
Business New Zealand
Consumer Electronics Association of New Zealand
Consumer Electronics Suppliers Association
Consumers' Federation of Australia
Electrical Regulatory Authorities Council
WorkSafe, New Zealand
Engineers Australia
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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 Standards Australia or the New Zealand Standards Executive at the address shown on the back cover.

This Standard was issued in draft form for comment as DR 19905.

Australian/New Zealand Standard™

Essential safety requirements for electrical equipment

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PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee QR-012, Conformance Marking to Regulatory Requirements to supersede AS/NZS 3820:2009 12 months from the date of publication. During this period, AS/NZS 3820:2009 with its Amendment 1:2011 will also remain current. Regulatory authorities that reference this Standard in regulation may apply these requirements at a different time. Users of this Standard should consult with these authorities to confirm their requirements

The objective of this Standard is to provide a set of criteria for the safety of electrical equipment before being placed on the market. For electrical equipment that is required to be approved/certified/registered by electrical safety legislation before being placed on the market, there are specific regulatory requirements additional to the requirements given in this Standard.

In the preparation of this Standard, consideration was given to the following publications and acknowledgment is made of the assistance received:

- European Union low voltage directive 2014/35/EU on the harmonisation of the laws of Member States relating to electrical equipment designed for use within certain voltage limits.
- IEC Guide 104: The preparation of safety publications and the use of basic safety publications and group safety publications.

This Standard is not a substitute for Standards that set out objective safety requirements based on testing. Rather it provides a high-level generic description of the safety outcomes to be achieved and is intended to assist in providing a basis for regulatory uniformity. Specific product Standards provide measurable criteria that are regarded as ensuring that the outcomes described in this Standard will be met.

Whilst compliance to this standard may be claimed by declaration, supporting documentation (such as certification or test reports or appropriate engineering assessments) is expected to be available if requested by a government electrical safety regulator. Where no one standard or standards cover the electrical equipment within its scope, or cover the risks identified or likely, reports to test standards and additional reports beyond test standards could be necessary to adequately demonstrate compliance with this standard.

Claimed compliance to requirements of this standard would be null and void in the event of incidents occurring due to design or manufacturing failure or due to the equipment being used in a manner not excluded by the instructions for use (even after installation in accordance with the instructions), regardless of any supporting documentation supplied at time of declaration of compliance. Refer also to clause 5.1.

This revision replaces the 2009 edition of AS/NZS 3820 to make it more compatible with the current safety regulatory requirements in Australia and New Zealand. It also includes consequential editorial changes.

The term 'informative' are used in this Standard to define that an 'informative' appendix is only for information and guidance.

Words in **bold** in the text are defined in clause 3.

AUSTRALIA/NEW ZEALAND STANDARD

Essential safety requirements for electrical equipment

1 SCOPE

This standard applies to **electrical equipment**

- designed for use with a supply voltage; or
- that has an output voltage;

not exceeding 1000 Volts for alternating current and 1500 Volts for direct current and intended for the purposes of generation, conversion, transmission, distribution, storage or utilisation of electricity.

This Standard sets out requirements for **electrical equipment**, to ensure that **electrical equipment** is constructed in accordance with good engineering practice in regard to safety such that it does not endanger the safety of persons (including children, the elderly and people with disabilities), domestic animals or property, when properly installed and maintained and used in applications for which it was made.

Medical **electrical equipment** and **electrical equipment** used in hazardous areas are subject to essential safety requirements in addition to those included in this standard.

2 REFERENCED DOCUMENTS

The following documents are referred to in this Standard:

AS/NZS 3112	Approval and test specification—Plugs and socket-outlets
AS/NZS 60335.1	Household and similar electrical appliances – Safety – Part 1: General requirements
AS/NZS 61558.2.7	Safety of power transformers, power supplies, reactors and similar products - Part 2.7: Particular requirements and tests for transformers and power supplies for toys

3 DEFINITIONS

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

3.1

electrical equipment

apparatus that generates, stores, insulates, uses, conveys or controls electricity or forms part of an electrical installation

Note: Examples of apparatus are batteries, **electric toys**, switch gear, control gear, accessories, appliances, information technology devices, tools, luminaires, wires, cables, fittings, and conduit.

3.2

direct contact

contact of persons or animals with a conductor that in normal circumstances is live.

3.3

electric toy

product designed or clearly intended for use in play by children under 14 years old and having at least one function dependent on electricity.