

Australian/New Zealand Standard™

Electric Toys—Safety



AS/NZS 62115:2011

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 15 September 2011 and on behalf of the Council of Standards New Zealand on 23 September 2011.

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The following are represented on Committee EL-002:

Australian Industry Group
Australian Retailers Association
Business New Zealand
Consumer Electronic Suppliers Association, Australia
Consumers' Federation of Australia
Electrical Regulatory Authorities, Australia
Electrical Compliance Testing Association
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Engineers Australia
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Ministry of Economic Development, New Zealand
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Australian/New Zealand Standard™

Electric Toys—Safety

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STANDARDS AUSTRALIA/STANDARDS NEW ZEALAND

AS/NZS 62115:2011**ELECTRIC TOYS – SAFETY****Foreword**

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 62115:2008 two years from the date of publication. During this period it is anticipated that regulatory authorities will approve electric toys to either standard.

The objective of this Standard is to provide manufacturers, designers, regulatory authorities, testing laboratories and similar organizations with safety requirements designed to give the user protection against hazards that might occur during normal operation and abnormal operation of the appliance and which may be used as the basis for approval for sale or for connection to the electricity supply mains in Australia and New Zealand

The text of IEC 62115 Ed 1.2, prepared by IEC Technical Committee 61, was submitted to the Standards Australia/Standards New Zealand Combined Procedure (dual public comment and committee vote) for adoption of the IEC standard as a Standards Australia/Standards New Zealand joint standard.

This Standard is an adoption with national modifications of the first edition of IEC 62115, *Electric toys – Safety* including its Amendment 1 (2004) and Amendment 2 (2010). It has been varied as indicated to take account of Australian and New Zealand conditions.

NOTE 1 The following numbering system is used:

- subclauses, tables and figures that are numbered starting from 101 are additional to those in Part 1;
- unless notes are in a new subclause or involve notes in Part 1, they are numbered starting from 101, including those in a replaced clause or subclause;
- additional annexes are lettered AA, BB, etc.;
- subclauses, notes and annexes that are additional to those in the IEC standard are prefixed with the letters AZ.

NOTE 2 The following print types are used:

- requirements: in roman type;
- *test specifications: in italic type;*
- notes: in small roman type.

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

p NOTE 3 In this document, p is used in the margin to indicate instructions for preparing a consolidated version.

The essential safety requirements in AS/NZS 3820¹ that could be applicable to requirements for electric toys are covered by this standard.

There are no national variations from the IEC Standard from which this standard is adopted.

¹ AS/NZS 3820 *Essential safety requirements for electrical equipment*

The text of the International Standard IEC 62115 Ed 1.2, was approved as a joint Australia/New Zealand Standard with the agreed national variations as given below.

AUSTRALIAN NATIONAL VARIATIONS

There are no national variations to this standard.

NEW ZEALAND NATIONAL VARIATIONS

There are no national variations to this standard.

Annex ANZ (normative)

Normative references to international publications with their corresponding joint Australia/New Zealand publications

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

NOTE When an international publication has been modified by national variations the relevant joint Australia/New Zealand publications applies if the national variations are needed to ensure the safety of the appliance for Australia/New Zealand conditions. These international publications are indicated by (mod). If an international publication is not so indicated, then either it or the listed Australia/New Zealand publication may be used.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>AS/NZS</u>	<u>Year</u>
IEC 60068-2-75		<i>Environmental testing – Part 2-75: Tests – Test Eh: Hammer tests</i>		
IEC 60083		<i>Plugs and socket-outlets for domestic and similar general use standardized in member countries of IEC</i>		
IEC 60086-2		<i>Primary batteries – Part 2: Physical and electrical specifications</i>		
IEC 60335-1:	2010	<i>Household and similar electrical appliances – Safety; Part 1- General Requirements</i>	AS/NZS 60335.1	2011
IEC 60335-2-29: Amendment 1 Amendment 2	2002 (2004) (2009) ²	<i>Household and similar electrical appliances – Safety; Part 2-29: Particular requirements for battery chargers</i>	AS/NZS 60335.2.29 Amendment 1 Amendment 2	2004 (2004) (2010)
IEC 60384-14		<i>Fixed capacitors for use in electronic equipment – Part 14: Sectional specification – Fixed capacitors for electromagnetic interference suppression and connection to the supply mains</i>		

² There exists a consolidated edition 4.2 (2010) that includes edition 4 and its amendments 1 and 2.

IEC 60417-1		<i>Graphical symbols for use on equipment – Part 1: Overview and application</i>		
IEC 60529: Amendment 1	1989 (1999) ³	<i>Degrees of protection provided by enclosures (IP Code)</i>		
IEC 60695-2-11		<i>Fire Hazard testing – Part 2-11: Glowing/hot-wire based test methods –Glow-wire flammability test method for end-products</i>	AS/NZS 60695.2.11	
IEC 60695-2-13		<i>Fire hazard testing – Part 2-13: Glowing/hot-wire based test methods –Glow-wire ignitability test method for materials</i>	AS/NZS 60695.2.13	
IEC 60695-10-2		<i>Fire hazard testing – Part 10: Guidance and test methods for the minimization of the effects of abnormal heat on electrotechnical products involved in fires – Section 2: Method for testing products made from non-metallic materials for resistance to heat using the ball pressure test</i>	AS/NZS 60695.10.2	
IEC 60695-11-5	2004	<i>Fire hazard testing – Part 11-5: Test flames – Needle-flame test method – Apparatus, confirmatory test arrangement and guidance</i>	AS/NZS 60695.11.5	2005
IEC 60695-11-10		<i>Fire hazard testing – Part 11-10: Test flames – 50 W horizontal and vertical flame test methods</i>	AS/NZS 60695.11.10	
IEC 60730-1: Amendment 1 Amendment 2	2000 (2003) (2007) ⁴	<i>Automatic electrical controls for household and similar use – Part 1: General requirements</i>		
IEC 60738-1		<i>Thermistors – Directly heated positive step-function temperature coefficient – Part 1: Generic specification</i>		

³ There exists a consolidated edition 2.1 (2001) that includes edition 2 and its amendment 1.

⁴ There exists a consolidated edition 3.2 (2008) that includes edition 4 and its amendments 1 and 2.

IEC 60825-1 Amendment 1 Amendment 2 including its corrigendum 1	1993 1997 2001 2002 ⁵	<i>Safety of laser products – Part 1: Equipment classification, requirements and user's guide</i>		
IEC 60990:	1999	<i>Methods of measurement of touch current and protective conductor current</i>	AS/NZS 60990	2002
IEC 61032		<i>Protection of persons and equipment by enclosures – Probes for verification</i>		
IEC 61058-1: Amendment 1 Amendment 2	2000 (2001) (2007) ⁶	<i>Switches for appliances – Part 1: General requirements</i>	AS/NZS 61058.1	2008
IEC 61558-2-7		<i>Safety of power transformers, power supply units and similar – Part 2: Particular requirements for transformers for toys</i>	AS/NZS 61558.2.7	
ISO 7000		<i>Graphical symbols for use on equipment – Index and synopsis</i>		
ISO 8124-1:	2009	<i>Safety of toys – Part 1: Safety aspects related to mechanical and physical properties</i>	AS/NZS ISO 8124.1 Amendment 1	2010 (2010)
ISO 8124-3		<i>Safety of toys – Part 3: Migration of certain elements</i>	AS/NZS ISO 8124.3	
ISO 9772		<i>Cellular plastics – Determination of horizontal burning characteristics of small specimens subjected to a small flame</i>		

⁵ There exists a consolidated edition 1.2 (2001) that includes edition 1 and its amendments 1 and 2.

⁶ There exists a consolidated edition 3.2 (2008) that includes edition 4 and its amendments 1 and 2.

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

ELECTRIC TOYS – SAFETY

FOREWORD

- 1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as “IEC Publication(s)”). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
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- 7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
- 8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
- 9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 62115 has been prepared by IEC technical committee 61: Safety of household and similar electrical appliances.

This consolidated version of IEC 62115 consists of the first edition (2003) [documents 61/2263/FDIS and 61/2323/RVD], its amendment 1 (2004) [documents 61/2711/FDIS and 61/2738/RVD] and its amendment 2 (2010) [documents 61/4051/FDIS and 61/4079/RVD].

The technical content is therefore identical to the base edition and its amendments and has been prepared for user convenience.

It bears the edition number 1.2.

A vertical line in the margin shows where the base publication has been modified by amendments 1 and 2.

The French version of this standard has not been voted upon.

This bilingual version (2006-01) replaces the English version.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

NOTE The following print types are used:

- requirements: in roman type;
- *test specifications: in italic type;*
- notes: in small roman type.

Words in **bold** in the text are defined in Clause 3. When a definition concerns an adjective, the adjective and the associated noun are also in bold.

2 |

The committee has decided that the contents of the base publication and its amendments will remain unchanged until the stability date indicated on the IEC web site under "<http://webstore.iec.ch>" in the data related to the specific publication. At this date, the publication will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

2 |

NOTE The attention of National Committees is drawn to the fact that equipment manufacturers and testing organizations may need a transitional period following publication of a new, amended or revised IEC publication in which to make products in accordance with the new requirements and to equip themselves for conducting new or revised tests.

It is the recommendation of the committee that the content of the amendment 2 be adopted for implementation nationally not earlier than 12 months or later than 36 months from the date of publication.

INTRODUCTION

It has been assumed in the drafting of this International Standard that the execution of its provisions is entrusted to appropriately qualified and experienced people.

As a general rule, toys are designed and manufactured for particular categories of children. Their characteristics are related to the age and stage of development of the children and their intended use presupposes certain capabilities.

Accidents are frequently due to a toy either being given to a child for whom it is not intended or being used for a purpose other than for which it was designed. This standard does not eliminate parental responsibility for the appropriate selection of toys. It is assumed that when choosing a toy or a game, account is taken of the physical and mental development of the child who will be playing with it.

The aim of this standard is to reduce risks when playing with toys, especially those risks that are not evident to users. However, it has to be recognized that some toys have risks inherent in their use that cannot be avoided. Consideration has been given to reasonably foreseeable use, bearing in mind that children are not generally as careful as adults.

While this standard applies to new toys, it nevertheless takes into account the wear and tear of toys in use.

The fact that a toy complies with this standard does not absolve parents and other persons in charge of a child from the responsibility of supervising the child. Supervision is also necessary when children of various ages have access to the same toy.

This standard covers the whole range of electric toys from small button cell operated lights to large sit-on cars powered by lead-acid cells. This results in different requirements and tests according to the type of toy. For some toys, testing can be reduced if particular criteria are met (see Clause 6).

A toy that complies with the text of this standard will not necessarily be judged to comply with the safety principles of the standard if, when examined and tested, it is found to have other features that impair the level of safety covered by these requirements.

A toy employing materials or having forms of construction differing from those detailed in the requirements of this standard may be examined and tested according to the intent of the requirements and, if found to be substantially equivalent, may be judged to comply with the standard.

ELECTRIC TOYS – SAFETY

1 Scope

This International Standard deals with the safety of **toys** that have at least one function dependent on electricity.

NOTE 1 Examples of **toys** also within the scope of this standard are

- **constructional sets**;
- **experimental sets**;
- functional **toys** (models that have a function similar to an appliance or installation used by adults);
- 2 | – **computer toys**;
- toy computers;

Additional requirements for **experimental sets** are given in Annex A.

Toys using electricity for secondary functions are within the scope of this standard.

NOTE 2 A doll's house having an interior lamp is an example of such a **toy**.

Additional requirements for toys incorporating lasers and light-emitting diodes are given in Annex E.

In order to comply with this standard, electric toys also have to comply with ISO 8124-1, since it covers hazards other than those arising by the use of electricity.

2 | NOTE 3 **Transformers for toys** (IEC 61558-2-7 for linear types or IEC 61558-2-7 and IEC 61558-2-16 for switch mode types), **battery chargers** (IEC 60335-2-29) and **battery chargers** for use by children (IEC 60335-2-29 Annex AA) are not considered to be part of a **toy** even if supplied with a **toy**.

NOTE 4 If it is intended that a child also plays with the packaging, the latter is considered to be part of the **toy**.

NOTE 5 This standard does not apply to

- toy steam engines;
- scale models for adult collectors;
- folk dolls and decorative dolls and other similar articles for adult collectors;
- sports equipment;
- aquatic equipment intended to be used in deep water;
- equipment intended to be used collectively in playgrounds;
- amusement machines (IEC 60335-2-82);
- professional **toys** installed in public places (shopping centres, stations, etc.);
- products containing heating elements intended for use under the supervision of an adult in a teaching context;
- 2 | – portable luminaries for children (IEC 60598-2-10);
- video and computer games;
- blowers for inflatable activity **toys** (e.g. bouncy castles);
- Christmas decorations.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60068-2-75, *Environmental testing – Part 2-75: Tests – Test Eh: Hammer tests*

IEC 60083, *Plugs and socket-outlets for domestic and similar general use standardized in member countries of IEC*