

**ELEKTRILISED MÄNGUASJAD. OHUTUS**

**Electric toys – Safety (IEC 62115:2017 + COR1:2019)**

**EESTI STANDARDI EESSÕNA****NATIONAL FOREWORD**

See Eesti standard EVS-EN IEC 62115:2020 +A11:2020 sisaldab Euroopa standardi EN IEC 62115:2020 ingliskeelset teksti ja selle muudatuse A11:2020 ingliskeelset teksti.	This Estonian standard EVS-EN IEC 62115 :2020+A11:2020 consists of the English text of the European standard EN IEC 62115:2020 and its amendment A11:2020.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.  Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 21.02.2020, muudatus A11 21.02.2020.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.  Date of Availability of the European standard is 21.02.2020, for A11 21.02.2020.
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English Version

**Electric toys - Safety**  
**(IEC 62115:2017 + COR1:2019)**

Jouets électriques - Sécurité  
(IEC 62115:2017 + COR1:2019)

Elektrische Spielzeuge - Sicherheit  
(IEC 62115:2017 + COR1:2019)

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European Committee for Electrotechnical Standardization  
Comité Européen de Normalisation Electrotechnique  
Europäisches Komitee für Elektrotechnische Normung

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## European foreword

The text of document 61/5319/FDIS, future edition 2 of IEC 62115, prepared by IEC/TC 61 "Safety of household and similar electrical appliances" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 62115:2020.

The following dates are fixed:

- latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2020-08-21
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2022-02-21

This document supersedes EN 62115:2005 and all of its amendments and corrigenda (if any).

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This document has been prepared under a mandate given to CENELEC by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

For the relationship with EU Directive(s) see informative Annex ZZ, which is an integral part of EN IEC 62115:2020/A11:2020<sup>1</sup>.

## Endorsement notice

The text of the International Standard IEC 62115:2017+COR1:2019 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following notes have to be added for the standards indicated:

IEC 60086-1	NOTE	Harmonized as EN 60086-1
IEC 60086-2	NOTE	Harmonized as EN 60086-2
IEC 60335-2-82	NOTE	Harmonized as EN 60335-2-82
IEC 60598-2-10	NOTE	Harmonized as EN 60598-2-10

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<sup>1</sup> EE NOTE The reference has been corrected.

## Amendment A11 European foreword

This European Standard (EN IEC 62115:2020/A11:2020) has been prepared by CLC/TC 61, "Safety of household and similar electrical appliances".

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withdrawn

EE NOTE 1 The "dop" and "dow" dates have been corrected. Also, the sentence "This document supersedes EN 62115:2005" has been deleted.

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NOTE The following print types are used:

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- 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.

There are no special national conditions causing a deviation from this European Standard.

There are no national deviations from this European Standard.

Annexes ZA, ZB and ZZ have been added by CLC/TC 61.

EE NOTE 2 The endorsement notice has been deleted.



IEC 62115

Edition 2.0 2017-04

# INTERNATIONAL STANDARD

## NORME INTERNATIONALE



**Electric toys – Safety**

**Jouets électriques – Sécurité**



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IEC 62115

Edition 2.0 2017-04

# INTERNATIONAL STANDARD

## NORME INTERNATIONALE



**Electric toys – Safety**

**Jouets électriques – Sécurité**

INTERNATIONAL  
ELECTROTECHNICAL  
COMMISSION

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ELECTRIC TOYS – SAFETY

## FOREWORD

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

This second edition cancels and replaces the first edition published in 2003, Amendment 1 (2004) and Amendment 2 (2010). This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

- the general conditions for tests has been rewritten and modified (Clause 5);
- the criteria for reduced testing has been modified (Clause 6);
- warnings for toys using button batteries or coin batteries have been added (7.3.3.2, 7.3.3.3);
- warnings on ride-on toys have been added (7.5);
- the requirements concerning accessibility of batteries have been updated (13.4.1 and 13.4.2);
- added requirements to cover toys placed above a child (13.4.4);
- added requirements to cover toys connected to other equipment (13.9);

- modified the requirements for safety of toys incorporating optical radiation sources (Annex E), to include requirements for using the technical LED data sheet for checking compliance with the specified accessible emission limits (AEL);
- updated the details for measurements of the optical radiation from the toy (Annex E);
- introduced an informative Annex I concerning measurement methods for toys with an integrated field source generating EMF;
- included a normative Annex J concerning safety of remote controls for electric ride-on toys.

The text of this standard is based on the following documents:

FDIS	Report on voting
61/5319/FDIS	61/5371/RVD

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

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

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

The contents of the corrigendum of August 2019 have been included in this copy.

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## 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, electric 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 an electric 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 electric toys. It is assumed that when choosing an electric 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 electric toys, especially those risks that are not evident to users. However, it has to be recognized that some electric 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 electric toys, it nevertheless takes into account the wear and tear of electric toys in use.

The fact that an electric 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 electric toy.

This standard covers the whole range of electric toys from small button battery or coin battery operated lights to large ride-on electric toys powered by rechargeable batteries. This results in different requirements and tests according to the type of electric toy. For some electric toys, testing can be reduced if particular criteria are met (see Clause 6).

Other safety aspects of electric toys are described in the EN 71 series of standards.

An electric 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.

*deleted text*

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## ELECTRIC TOYS – SAFETY

### 1 Scope

This European Standard specifies safety requirements for **electric toys** that have at least one function dependant on electricity, **electric toys** being any product designed or clearly intended, whether or not exclusively, for use in play by children of less than 14 years of age.

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

- constructional sets;
- **experimental sets**;
- functional **electric toys** (an **electric toy** which performs and is used in the same way as a product, appliance or installation intended for use by adults, and which may be a scale model of such product, appliance or installation);
- **electric toy** computers;
- A doll's house having an interior lamp

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

Additional requirements for **electric toys** incorporating optical radiation sources are given in Annex E.

Measurement methods for **electric toys** generating Electromagnetic fields (EMF) are given in Annex I.

Additional requirements for the safety of remote-controls for **electric ride-on toys** are given in Annex J.

If the packaging is intended to have play value, then it is considered to be part of the **electric toy**.

This European Standard only covers the safety aspects of **electric toys** that relate to an electrical function.

NOTE 2 The EN 71 series of standards address other aspects of the safety of toys. Other horizontal product standards may also apply to toys.

This standard covers the safety of **electric toys** taking power from any source, such as batteries, transformers, solar cells and inductive connections.

NOTE 3 **Transformers for toys** (EN 61558-2-7:2007 for linear types or EN 61558-2-7:2007 and EN 61558-2-16:2013 for switch mode types), **battery chargers** (EN 60335-2-29:2010) and **battery chargers** for use by children (EN 60335-2-29:2010, Annex AA) are not considered to be part of an **electric toy** even if supplied with an **electric toy**.

NOTE 4 This standard is not intended to assess the safety of batteries however it does address the safety of the **electric toy** with the batteries inserted.

This European Standard does not apply to the following toys:

- playground equipment intended for public use;
- automatic playing machines, whether coin operated or not, intended for public use;



- **toy** vehicles equipped with combustion engines;
- **toy** steam engines; and
- slings and catapults;

Furthermore, it does not cover the following items, which, for the purposes of this European Standard, are not considered toys:

- decorative objects for festivities and celebrations;
- products for collectors, provided that the product or its packaging bears a visible and legible indication that it is intended for collectors of 14 years of age and above; examples of this category are:
  - detailed and faithful scale models ;
  - kits for the assembly of detailed scale models;
  - folk dolls and decorative dolls and other similar articles;
  - historical replicas of toys;
  - reproductions of real fire arms;
- sports equipment, including roller skates, inline skates, and skateboards intended for children with a body mass of more than 20 kg;
- bicycles with a maximum saddle height of more than 435 mm, measured as the vertical distance from the ground to the top of the seat surface, with the seat in a horizontal position and with the seat pillar set to the minimum insertion mark;
- scooters and other means of transport designed for sport or which are intended to be used for travel on public roads or public pathways;
- electrically driven vehicles which are intended to be used for travel on public roads, public pathways, or the pavement thereof;
- aquatic equipment intended to be used in deep water, and swimming learning devices for children, such as swim seats and swimming aids;
- puzzles with more than 500 pieces;
- guns and pistols using compressed gas, with the exception of water guns and water pistols and bows for archery over 120 cm long;
- fireworks, including percussion caps which are not specifically designed for toys;
- products and games using sharp-pointed missiles, such as sets of darts with metallic points;
- functional educational products, such as electric ovens, irons or other functional products operated at a nominal voltage exceeding 24 V which are sold exclusively for teaching purposes under adult supervision;
- products intended for use for educational purposes in schools and other pedagogical contexts under the surveillance of an adult instructor, such as science equipment;

- electronic equipment, such as personal computers and game consoles, used to access interactive software and their associated peripherals, unless the electronic equipment or the associated peripherals are specifically designed for and targeted at children and have a play value on their own, such as specially designed personal computers, key boards, joy sticks or steering wheels;
- interactive software, intended for leisure and entertainment, such as computer games, and their storage media, such as CDs;
- babies' soothers
- child-appealing luminaires;
- electrical transformers for toys
- fashion accessories for children which are not for use in play;

In addition, this European standard does not apply to the following types of products:

- amusement machines and personal service machines;
  - professional **electric toys** installed in public places (such as shopping centres and railway stations);
  - products containing heating elements intended for use under the supervision of an adult in a teaching context;
  - portable luminaires for children;
  - blowers for inflatable activity toys (such as blowers for bouncy castles);
  - electric decorative robots
- EE NOTE      Decorative robots are robots for interior decorating, not toys for children.
- personal protective equipment including swimming goggles, sunglasses and other eye protectors as well as bicycle and skateboard helmets.

## 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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.

EN 71-1:2014+A1:2018, *Safety of toys — Part 1: Mechanical and physical properties*

EN 50410:2008 *Household and similar electrical appliances — Safety — Particular requirements for decorative robots*

IEC 60068-2-75:2014, *Environmental testing – Part 2-75: Tests – Test Eh: Hammer tests*

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

IEC 60086-2: 2015, *Primary batteries – Part 2: Physical and electrical specifications*

IEC 60086 (all parts), *Primary batteries*

IEC 60335-1:2010, *Household and similar electrical appliances – Safety – Part 1: General requirements*

IEC 60335-1:2010/AMD1: 2013

IEC 60335-1:2010/AMD2:2016<sup>2)</sup>

IEC 60335-2-29:2016, *Household and similar electrical appliances – Safety – Part 2-29: Particular requirements for battery chargers*

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

IEC 60417, *Graphical symbols for use on equipment*

IEC 60529:1989, *Degrees of protection provided by enclosures (IP Code)*

IEC 60529/AMD1:1999

IEC 60529/AMD2:2013<sup>3)</sup>

IEC 60695-2-11, *Fire hazard testing – Part 2-11: Glowing/hot-wire based test methods – Glow-wire flammability test method for end-products (GWEPT)*

IEC 60695-2-13, *Fire hazard testing – Part 2-13: Glowing/hot-wire based test methods – Glow-wire ignition temperature (GWIT) test method for materials*

IEC 60695-10-2, *Fire hazard testing – Part 10-2: Abnormal heat – Ball pressure test method*

IEC 60695-11-5:2004, *Fire hazard testing – Part 11-5: Test flames – Needle-flame test method – Apparatus, confirmatory test arrangement and guidance*

IEC 60695-11-10, *Fire hazard testing – Part 11-10: Test flames – 50 W horizontal and vertical flame test methods*

IEC 60730 (all parts), *Automatic electrical controls*

IEC 60730-1:2013, *Automatic electrical controls – Part 1: General requirements*

IEC 60730-1:2013/AMD1:2015<sup>4)</sup>

IEC 60738-1, *Thermistors – Directly heated positive temperature coefficient – Part 1: Generic specification*

IEC 60990:2016, *Methods of measurement of touch current and protective conductor current*

IEC 61000-4-2: 2008, *Electromagnetic compatibility (EMC) – Part 4-2: Testing and measurement techniques – Electrostatic discharge immunity test*

2 There exists a consolidated edition 5.2 (2016) that includes edition 5 and its Amendment 1 and Amendment 2.

3 There exists a consolidated edition 2.2 (2013) that includes edition 2 and its Amendment 1 and Amendment 2.

4 There exists a consolidated edition 5.1 (2015) that includes edition 5 and its Amendment 1.

IEC 61000-4-3:2006, *Electromagnetic compatibility (EMC) – Part 4-3: Testing and measurement techniques – Radiated, radio-frequency, electromagnetic field immunity test*  
IEC 61000-4-3/AMD1:2007  
IEC 61000-4-3/AMD2:2010<sup>5)</sup>

IEC 61000-4-4:2012, *Electromagnetic compatibility (EMC) – Part 4-4: Testing and measurement techniques – Electrical fast transient/burst immunity test*

IEC 61000-4-5:2014, *Electromagnetic compatibility (EMC) – Part 4-5: Testing and measurement techniques – Surge immunity test*

IEC 61000-4-6:2013, *Electromagnetic compatibility (EMC) – Part 4-6: Testing and measurement techniques – Immunity to conducted disturbances, induced by radio-frequency fields*

IEC 61000-4-11:2004, *Electromagnetic compatibility (EMC) – Part 4-11: Testing and measurement techniques – Voltage dips, short interruptions and voltage variations immunity tests*

IEC 61000-4-13:2002, *Electromagnetic compatibility (EMC) – Part 4-13: Testing and measurement techniques – Harmonics and interharmonics including mains signalling at a.c. power port, low frequency immunity tests*  
IEC 61000-4-13/AMD1:2009  
IEC 61000-4-13/AMD2:2015<sup>6)</sup>

IEC 61032, *Protection of persons and equipment by enclosures – Probes for verification*

IEC 61058-1:2016, *Switches for appliances – Part 1: General requirements*

IEC 61058-1-1:2016, *Switches for appliances – Part 1-1: Requirements for mechanical switches*

IEC 61058-1-2:2016, *Switches for appliances – Part 1-2: Requirements for electronic switches*

IEC 61180, *High-voltage test techniques for low-voltage equipment – Definitions, test and procedure requirements, test equipment*

IEC 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*

IEC 61558-2-16, *Safety of transformers, reactors, power supply units and similar products for supply voltages up to 1 100 V – Part 2-16: Particular requirements and tests for switch mode power supply units and transformers for switch mode power supply units*

IEC 62133, *Secondary cells and batteries containing alkaline or other non-acid electrolytes – Safety requirements for portable sealed secondary cells, and for batteries made from them, for use in portable applications*

IEC 62233:2005, *Measurement methods for electromagnetic fields of household appliances and similar apparatus with regard to human exposure*

IEC 62471:2006, *Photobiological safety of lamps and lamp systems*

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5 There exists a consolidated edition 3.2 (2010) that includes edition 3 and its Amendment 1 and Amendment 2.

6 There exists a consolidated edition 1.2 (2015) that includes edition 1 and its Amendment 1 and Amendment 2.