SLOVENSKI STANDARD
SIST EN 62115:2005/A11:2012

01-november-2012

Električne igrače - Varnost - Dopolnilo A11

Electric toys - Safety

Elektrische Spielzeuge - Sicherheit

Jouets électriques - Sécurité

Ta slovenski standard je istoveten z: **EN 62115:2005/A11:2012**

ICS:

13.120	Varnost na domu	Domestic safety
97.200.50	Igrače	Toys

SIST EN 62115:2005/A11:2012 **en**

EUROPEAN STANDARD

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EN 62115/A11

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ICS 13.120; 97.200.50

English version

Electric toys - Safety

Jouets électriques - Sécurité

Elektrische Spielzeuge - Sicherheit

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CENELEC

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

Management Centre: Avenue Marnix 17, B - 1000 Brussels

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Foreword

This document (EN 62115:2005/A11:2012) has been prepared by CLC/TC 61 "Safety of household and similar electrical appliances".

The following dates are fixed:

– latest date by which this document has to be implemented at national level by publication of an identical national standard or by endorsement	(dop)	2013-06-04
– latest date by which the national standards conflicting with this document have to be withdrawn	(dow)	2015-06-04

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC [and/or CEN] shall not be held responsible for identifying any or all such patent rights.

This A11 has been developed to answer the concerns expressed by the European Commission regarding EN 62115:2005 and its links with M/445 and the Toys Directive 2009/48/EC (see D136/061 and BT136/DG8024/DC).

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.

For the relationship with EU Directive 2009/48/EC, see informative Annexes ZZA and ZZB, which are an integral part of this document.

Clauses, subclauses, notes, tables and figures which are additional to those in IEC 62115:2003 + A1:2004+ A2:2010 are prefixed "Z".

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.

1 Scope

Replace *the first paragraph by the following:*

This European Standard specifies electrical safety requirements for **toys** that have at least one function dependant on electricity, **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.

Replace *the 3rd dash of Note 1 by the following:*

– functional **toys** (a **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);

Replace *the 2nd paragraph after Note 2 by the following text:*

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

This European Standard only covers the electrical safety aspects of **toys**. Non-electrical safety aspects are covered by EN 71 series. For more details, see Annexes ZZA and ZZB.

Delete *Notes 4 and 5.*

Add *the following after Note 3.*

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;
– slings and catapults.

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

– electric decorative robots (EN 50410);
– decorative objects for festivities and celebrations;
– 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;
– 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;
– fireworks, including percussion caps which are not specifically designed for **toys**;

– 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;
– child-appealing luminaries;
– fashion accessories for children which are not for use in play;
– babies soothers;
– personal protective equipment including swimming goggles, sunglasses and other eye protectors as well as bicycle and skateboard helmets;
– 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**, and
– reproductions of real firearms.

2 Normative references

Add *the following new references:*

EN 60730 series, *Automatic electrical controls for household and similar use (IEC 60730 series)*

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

EN 61000-4-3, *Electromagnetic compatibility (EMC) – Part 4-3: Testing and measurement techniques – Radiated, radio-frequency, electromagnetic field immunity test (IEC 61000-4-3)*

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

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

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

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

EN 61000-4-13, *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)*

EN 61180-1, *High-voltage test techniques for low-voltage equipment – Part 1: Definitions, test and procedure requirements* (IEC 61180-1)

EN 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 61558-2-6)*

EN 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 61558-2-16)*

EN 62233:2008 + corr. Aug. 2008, *Measurement methods for electromagnetic fields of household appliances and similar apparatus with regard to human exposure* (IEC 62233:2005, mod.)

***Delete** the following references*

EN 71-3*, Safety of toys - Part 3: Migration of certain elements*

EN 60730-1*, Automatic electrical controls for household and similar use - Part 1: General requirements (IEC 60730-1)*

***Replace** EN 60068-2-75 by the following:*

EN 60068-2-75:1997, *Environmental testing – Part 2-75: Tests – Test Eh: Hammer tests (IEC 60068-2-75:1997)*

3 Definitions

***Add** the following new definitions:*

3.5.Z1
dangerous malfunction
unintended operation of the appliance that may impair safety

3.5.Z2
protective electronic circuit
electronic circuit that prevents a hazardous situation under abnormal operating conditions

NOTE Parts of the circuit may also be used for functional purposes.

4 General requirement

***Delete** the word 'normal' from the requirement (1st paragraph).*

5 General conditions for the tests

5.7 ***Add** the following:*

The interconnection cord set for connection to a computer, console, monitor screen or other audio-video equipment supplied with a **computer toy** is tested with the connector of the interconnection cord set fully inserted in the appliance inlet of the **toy**. The plug-connector at the other end of the interconnection cord is not tested (see 14.Z1).

NOTE The term "interconnection cord set" is defined in EN 60799:1998.

6 Criteria for reduced testing

6.2 ***Replace** the text by the following:*

6.2 Battery toys are considered to comply with Clauses 10, 11 (except 11.1), 12, 15 (except 15.2), 17 (except 17.1 for battery compartments intended to contain button cell batteries), 18 (except the additional distances for **computer toys**) and 19 if

– the accessible insulation between parts of different polarity cannot be bridged by a straight steel pin having a diameter of 0,5 mm and any suitable length over 25 mm, (insulation between parts of different polarity in battery compartments protected by a cover that can only be removed with the aid of a **tool** or by two independent movements applied simultaneously are not considered as accessible for the purposes of this requirement), and

– the total battery voltage does not exceed 2,5 V, measured 1 s after a 1 Ω resistor has been connected between the supply terminals of the **toy**, with any current limiting device short-circuited and without the **toy** being operated.

7 Marking and instructions

7.4 ***Replace*** *the 5th paragraph (introduced by EN 62115:2005/A2:2011) with the following:*

The instructions and markings for **dual-supply toys** shall include the instructions and markings required for both **battery toys** and **transformer toys.**

Add *the following before the paragraph starting with "The instructions for* ***transformer toys****":*

For **transformer toys**, the following age warning shall be visible to consumers at the time of purchase:

"Warning Not suitable for children under 36 months".

A brief indication of the specific hazard calling for this restriction (e.g. misuse of transformer can cause electrical shock) "shall accompany the age warning or appear in the instructions which accompany the **toy**. The text "Not suitable for children under 36 months" may be replaced by the age warning symbol from EN 71-1. This requirement does not apply to **toys** which, on account of their function, dimensions, properties and similar characteristics, are clearly unsuitable for children under 36 months. The term "36 months" may be replaced with the term "3 years".

Replace *the second dash in the third list with the following new dashes:*

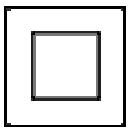
– the **toy** shall only be used with a **transformer for toys**;

– the model number or specification of a suitable transformer for use with the **toy**;

Add *the following before the last paragraph:*

For **computer toys** which do not meet the requirement of 14.Z1 b), the instructions shall state the substance of the following:

"The **toy** is only to be connected to Class II equipment bearing the following symbol"



Class II equipment

[symbol 5172 of IEC 60417-1]

Add *the following after 7.4:*

7.Z1 The **accessible parts** of **toys** that are intended for children 3 years and over but less than 8 years which exceed the temperature rise limit for children less than 3 years according to Table Z1 (see 9.9) shall carry the following warning that shall be visible to consumers at the time of purchase:

"Warning Not suitable for children under 36 months"

The text "Not suitable for children under 36 months" may be replaced by the age warning symbol from EN 71-1.

The term "36 months" may be replaced by "3 years".

A brief indication of the specific hazard calling for this restriction (e.g. hot surface) shall accompany the age warning or appear in the instructions which accompany the **toy.**

This requirement does not apply to **toys** which, on account of their function, dimensions, properties and similar characteristics, are clearly unsuitable for children under 36 months.

The **accessible parts** of **toys** that are intended for children 8 years and over, and which exceed the temperature rise limit for children 3 years to less than 8 years according to Table Z1 (see 9.9) shall carry the following warning that shall be visible to consumers at the time of purchase:

"Warning Not suitable for children under 8 years"

A brief indication of the specific hazard calling for this restriction (e.g. hot surface) shall accompany the age warning or appear in the instructions which accompany the **toy.**

9 Heating and abnormal operation

9.1 ***Replace*** *the first sentence by the following:*

Toys shall not attain excessive temperatures in use, and shall not malfunction in such a way as to cause any unintended operation that may impair safety.

Add *the following new note after the first paragraph.*

NOTE Z1 Examples of **toys** which could malfunction in such a way as to cause an unintended operation that may impair safety are ride-on **toys** which could unexpectedly move, change direction or gain speed or functional **toys** such as a **toy** sewing machine which could unexpectedly start.

Add *the following new paragraph after new Note Z1.*

Toys which have an electronic control system shall be designed and manufactured in such a way that they operate safely even if the electronic system starts malfunctioning due to a failure of the system or due to electromagnetic influence from an outside source.

Add *the following new paragraphs after the 6th paragraph starting with "**Toys** incorporating **electronic circuits** ...".*

If during the tests of 9.8 an **electronic circuit** prevents the hazardous conditions listed in 9.9 or dangerous malfunction, it shall additionally comply with Annex ZB. In this case, the **electronic circuit** is considered as a **protective electronic circuit**. **Toys** with an electronic off-mode or stand-by mode shall also comply with Annex ZB, if the **toy** can malfunction in such a way as to cause any unintended operation that may impair safety.

9.9 ***Replace*** *the text with the following:*

9.9 *During the tests, the temperature rises of **accessible parts** are monitored continuously.*

The temperature rise of the surface of handles, knobs and other parts that are likely to be touched by hand shall not exceed the following values:

– *25 K, for parts of metal;*

– *30 K, for parts of glass or porcelain;*

– *35 K, for parts of plastic or wood.*

*The temperature rise of other **accessible parts** of the **toy** shall not exceed the values specified in Table Z1.*

*The temperature rise of battery surfaces and other parts inside the battery compartment, where batteries are inside a battery compartment with a cover, which can only be opened by the use of a **tool** or by at least two independent movements applied simultaneously, shall not exceed 45 K.*

Table Z1 – Temperature rise limits for other accessible parts

Toy intended for	*Metal (uncoated) surface*	*metal with coating thickness greater than 50 µm*	*metal with coating thickness greater than 100 µm*	*metal with coating thickness greater than 150 µm*	*Ceramics, glass & stone surfaces*	*Plastic, wood and other surfaces*
Children < 3 years	*29 K*	*29 K*	*29 K*	*30 K*	*39 K*	*44 K*
Children 3 years to < 8 years	*33 K*	*36 K*	*39 K*	*41 K*	*46 K*	*50 K*
Children 8 years and above	*36 K*	*43 K*	*48 K*	*53 K*	*50 K*	*55 K*
NOTE 1 The limits for metal (uncoated) surfaces apply to batteries with coated metal surfaces *NOTE 2 The temperature of the terminals of switches is measured if the switch is tested in accordance with Annex C.* *NOTE 3 For coatings less than 50 µm the values for uncoated surfaces are used.*						

During the tests,

– *sealing compound shall not flow out;*

– *the **toy** shall not emit flames or molten metal;*

– *dangerous substances shall not be produced, such as poisonous or ignitable gas, in hazardous amounts;*

– *vapour shall not accumulate in the **toy**;*

– *enclosures shall not deform to such an extent that compliance with this European Standard is impaired;*

– *batteries shall not leak hazardous substances or erupt;*

– *materials, including the cotton gauze, shall not char.*

*After the tests, the **toy** shall not be damaged to such an extent that compliance with this European Standard is impaired.*

***Toys** having **accessible parts** with temperature rises exceeding the values in Table Z1 for children less than 3 years or for children between 3 years and 8 years shall have a warning together with the appropriate age indication, 3 years or 8 years (see 7.Z1).*

14 Construction

14.1 ***Replace*** *the first paragraph to read:*

14.1 **Toys** shall be **battery toys**, **transformer toys** or **dual-supply toys**. Their nominal supply voltage shall not exceed 24 V.

14.10 ***Add*** *the following note after the first paragraph:*

NOTE Z1 Connectors (jack plugs, USB plugs, RCA phono plugs etc.) with a diameter or diagonal measurement between 3,75 mm and 5,25 mm and length greater than 7 mm are considered to fail this requirement.

***Add** the following after 14.16:*

14.Z1 Computer toys shall be safe when connected to a computer, console, monitor screen or other audio-video equipment, even in case of a fault in the equipment it is connected to. **Computer toys** shall therefore comply with one of the following conditions:

a) the **computer toy** shall include an instruction to advise that the **toy** shall only be connected to equipment of Class II (see 7.4); or

b) conductive parts of **computer toys** electrically connected to a computer, console, monitor screen or other audio-video equipment shall not be accessible in the **toy** and the insulation between such parts and **accessible parts** shall have a thickness of at least 1 mm and an adequate electric strength.

Compliance with condition a) is checked by inspection.

Compliance with condition b) is checked by the following test.

*The test is carried out with the **toy** in the fully assembled condition with battery compartment covers in place, unless it is necessary that the covers be removed for the correct use of the **toy**. The connectors of the interconnection cord are fully inserted in the relevant appliance inlets of the **toy**. The plug-connector at the other end of the cord for connecting to the equipment is not tested. Further connections from the **toy** to other parts of the **toy** are not connected.*

*The **toy** is operated under **normal operation** according to 9.3.*

*The **toy** is then disconnected from the supply and the insulation is immediately subjected to a voltage of 1 500 V having a frequency of 50 Hz or 60 Hz for 1 min, in accordance with EN 61180-1.*

The high-voltage source used for the test is to be capable of supplying a short circuit current I_s between the output terminals after the output voltage has been adjusted to the appropriate test voltage. The overload release of the circuit is not to be operated by any current below the tripping current I_r. The value of I_s is 200 mA and the value of I_r is 100 mA.

*The test voltage is applied between conductive parts intended to be connected to a computer, console, monitor screen or other audio-video equipment and **accessible parts**, non-metallic parts being covered with metal foil. The metal foil is placed on and following the surface but is not pushed down into recesses or appliance inlets. The above mentioned connector inserted into the appliance-inlets are also covered by metal foil.*

No breakdown shall occur during the test.

NOTE Z1 Care should be taken to avoid overstressing the components of **electronic circuits.**

NOTE Z2 The maximum voltage which is considered to be transferred to the **toy** from the equipment is 230 V.

NOTE Z3 Glow discharges without drop in voltage are neglected.

*For **computer toys** complying with 14.Z1 b), the distances as stated in Clause 18 shall be fulfilled.*

16 Components

16.3 ***Replace** the text by the following:*

16.3 Transformers for toys shall comply with EN 61558-2-7 for linear types or EN 61558-2-7 and EN 61558–2-16 for switch mode types.

Compliance is checked by inspection (verification of test certificates) or by testing according to the relevant standard(s).

NOTE The transformer is tested separately from the **toy**.