



# SLOVENSKI STANDARD SIST EN IEC 62115:2020

01-april-2020

Nadomešča:

SIST EN 62115:2005

SIST EN 62115:2005/A11:2012

SIST EN 62115:2005/A11:2012/AC:2013

SIST EN 62115:2005/A12:2015

SIST EN 62115:2005/A2:2011

SIST EN 62115:2005/A2:2011/AC:2011

---

**Električne igrače - Varnost**

**iTeh STANDARD PREVIEW**

Electric toys - Safety

**(standards.iteh.ai)**

Elektrische Spielzeuge - Sicherheit

[SIST EN IEC 62115:2020](https://standards.iteh.ai/catalog/standards/sist/1876323c-6a17-49af-9dea-9ee3ecc2ebf6/sist-en-iec-62115-2020)

<https://standards.iteh.ai/catalog/standards/sist/1876323c-6a17-49af-9dea-9ee3ecc2ebf6/sist-en-iec-62115-2020>

Jouets électriques - Sécurité

**Ta slovenski standard je istoveten z: EN IEC 62115:2020**

---

**ICS:**

13.120	Varnost na domu	Domestic safety
97.200.50	Igrače	Toys

**SIST EN IEC 62115:2020**

**en**

**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**

[SIST EN IEC 62115:2020](#)

<https://standards.iteh.ai/catalog/standards/sist/1876323c-6a17-49af-9dea-9ee3ecc2ebf6/sist-en-iec-62115-2020>

EUROPEAN STANDARD

EN IEC 62115

NORME EUROPÉENNE

EUROPÄISCHE NORM

February 2020

ICS 13.120; 97.200.50

Supersedes EN 62115:2005 and all of its amendments  
and corrigenda (if any)

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)

This European Standard was approved by CENELEC on 2017-05-16. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CENELEC member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

(standards.iteh.ai)

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.



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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

**EN IEC 62115:2020 (E)****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).

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

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 62115:2020/A11:2020.

[SIST EN IEC 62115:2020](https://standards.iteh.ai/catalog/standards/sist/1876323c-6a17-49af-9dea-9ee3ecc2ebf6/sist-en-iec-62115-2020)

<https://standards.iteh.ai/catalog/standards/sist/1876323c-6a17-49af-9dea-9ee3ecc2ebf6/sist-en-iec-62115-2020>

**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

## Annex ZA (normative)

### Normative references to international publications with their corresponding European publications

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.

NOTE 1 Where an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: [www.cenelec.eu](http://www.cenelec.eu).

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60068-2-75	2014	Environmental testing - Part 2-75: Tests - Test Eh: Hammer tests	-EN 60068-2-75	2014
IEC 60086	series	Primary batteries - Part 1: General	EN 60086	series
IEC 60086-2	2015	Primary batteries - Part 2: Physical and electrical specifications	and EN 60086-2	2016
IEC 60335-1 (mod)	2010	Household and similar electrical appliances - Safety - Part 1: General requirements	EN 60335-1	2012
			+A11	2014
			+A12	2017
			+AC	2014
			+A14	2019
			+A13	2017
			+prA15	
			+prA16	
IEC 60335-2-29	2016	Household and similar electrical appliances - Safety - Part 2-29: Particular requirements for battery chargers	Fpr EN 60335-2-29	2016
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	EN 60384-14	-
IEC 60417	-	Graphical symbols for use on equipment. Index, survey and compilation of the single sheets.	HD 243 S12	-
			+HD	2431995
			S12:1995/corrigendum Oct. 1995	
IEC 60529	1989	Degrees of protection provided by enclosures (IP Code)	EN 60529	1991
			+EN	1993
			60529:1991/corrigendum May 1993	

## EN IEC 62115:2020 (E)

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60695-2-11	-	Fire hazard testing - Part 2-11:EN 60695-2-11 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:EN 60695-2-13 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: Guidance- and test methods for the minimization of the effects of abnormal heat on electrotechnical products involved in fires - Method for testing products made from non-metallic materials for resistance to heat using the ball pressure test		-
IEC 60695-11-5	2004	Fire hazard testing -- Part 11-5: Test flames - Needle-flame test method - Apparatus, confirmatory test arrangement and guidance	EN 60695-11-5	2005
IEC 60695-11-10	-	Fire hazard testing_- Part_11-10: Test- flames_- 50_W horizontal and vertical flame test methods		-
IEC 60730 (mod)	series	Automatic electrical controls for household and similar use -- Part 1: General requirements	EN 60730	series
<p><b>iTeh STANDARD PREVIEW</b> (standards.iteh.ai)</p> <p>SIST EN IEC 62115:2020 <a href="https://standards.iteh.ai/catalog/standards/sist/1876323c-6a17-417-49ee3ecc2ebf6/sist-en-iec-62115-2020">https://standards.iteh.ai/catalog/standards/sist/1876323c-6a17-417-49ee3ecc2ebf6/sist-en-iec-62115-2020</a></p>				
			+prAC	
			+A15	2007
			+A16	2007
			+A12	2003
			+prA	
			+A11	2002
			+A14	2005
			+A13	2004
			+EN	60730-2007
			1:2000/corrigendum	
			Aug. 2007	
IEC 60730-1 (mod)	2013	Automatic electrical controls - Part 1: General requirements	EN 60730-1	2016
IEC 60738-1	-	Thermistors - Directly heated positive temperature coefficient - Part 1: Generic specification	EN 60738-1	-
IEC 60990	2016	Methods of measurement of touch current and protective conductor current	EN 60990	2016
IEC 61000-4-2	2008	Electromagnetic compatibility (EMC) - Part 4-2: Testing and measurement techniques - Electrostatic discharge immunity test	EN 61000-4-2	2009
IEC 61000-4-3	2006	Electromagnetic compatibility (EMC) - Part 4-3 : Testing and measurement techniques - Radiated, radio-frequency, electromagnetic field immunity test	EN 61000-4-3	2006
IEC 61000-4-4	2012	Electromagnetic compatibility (EMC) - Part 4-4: Testing and measurement techniques - Electrical fast transient/burst immunity test	EN 61000-4-4	2012
IEC 61000-4-5	2014	Electromagnetic compatibility (EMC) - Part 4-5: Testing and measurement techniques - Surge immunity test	EN 61000-4-5	2014

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 61000-4-6	2013	Electromagnetic compatibility (EMC) - Part 4-6: Testing and measurement techniques - Immunity to conducted disturbances, induced by radio-frequency fields	EN 61000-4-6	2014
+A1	2017		+A1	2017
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	EN 61000-4-13	2002
IEC 61032	-	Protection of persons and equipment by enclosures - Probes for verification	EN 61032	-
IEC 61058-1	2016	Switches for appliances - Part 1: General requirements	EN IEC 61058-1	2018
IEC 61058-1-1	2016	Switches for appliances - Part 1-1: Requirements for mechanical switches	EN 61058-1-1	2016
IEC 61058-1-2	2016	Switches for appliances - Part 1-2: Requirements for electronic switches	+EN 61058-1-1:2016/AC:2019-02 EN 61058-1-2	2016
IEC 61180	-	High-voltage test techniques for low-voltage equipment - Definitions, test and procedure requirements, test equipment	EN 61180	-
IEC 61558-2-7 (mod)	-	Safety of power transformers, power supplies, reactors and similar products - Part 2-7: Particular requirements and tests for transformers and power supplies for toys	EN 61558-2-7	-
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	EN 61558-2-16	-
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	EN 62133	-
IEC 62233 (mod)	2005	Measurement methods for electromagnetic fields of household appliances and similar apparatus with regard to human exposure	EN 62233	2008
			+EN 62233:2008/corrigendum Aug. 2008	2008
			+prA	
IEC 62471 (mod)	2006	Photobiological safety of lamps and lamp systems	EN 62471	2008
ISO 3864-1	-	Graphical symbols - Safety colours and safety signs - Part 1: Design principles for safety signs and safety markings		-
ISO 7000	-	Graphical symbols for use on equipment - Registered symbols		-
ISO 8124-1	2014	Safety of toys - Part 1: Safety aspects-related to mechanical and physical properties		-

**EN IEC 62115:2020 (E)**

<b><u>Publication</u></b>	<b><u>Year</u></b>	<b><u>Title</u></b>	<b><u>EN/HD</u></b>	<b><u>Year</u></b>
ISO 9772	-	Cellular plastics -- Determination of horizontal burning characteristics of small specimens subjected to a small flame		-
IEC/TR 60083	-	Plugs and socket-outlets for domestic and similar general use standardized in member countries of IEC		-

## **iTeh STANDARD PREVIEW (standards.iteh.ai)**

[SIST EN IEC 62115:2020](https://standards.iteh.ai/catalog/standards/sist/1876323c-6a17-49af-9dea-9ee3ecc2ebf6/sist-en-iec-62115-2020)

<https://standards.iteh.ai/catalog/standards/sist/1876323c-6a17-49af-9dea-9ee3ecc2ebf6/sist-en-iec-62115-2020>





IEC 62115

Edition 2.0 2017-04

# INTERNATIONAL STANDARD

# NORME INTERNATIONALE



**Electric toys – Safety** **STANDARD PREVIEW**  
**Jouets électriques – Sécurité** **(standards.iteh.ai)**

[SIST EN IEC 62115:2020](https://standards.iteh.ai/catalog/standards/sist/1876323c-6a17-49af-9dea-9ee3ecc2ebf6/sist-en-iec-62115-2020)

<https://standards.iteh.ai/catalog/standards/sist/1876323c-6a17-49af-9dea-9ee3ecc2ebf6/sist-en-iec-62115-2020>

INTERNATIONAL  
ELECTROTECHNICAL  
COMMISSION

COMMISSION  
ELECTROTECHNIQUE  
INTERNATIONALE

ICS 13.120; 97.200.50

ISBN 978-2-8322-4088-5

**Warning! Make sure that you obtained this publication from an authorized distributor.**  
**Attention! Veuillez vous assurer que vous avez obtenu cette publication via un distributeur agréé.**

## CONTENTS

FOREWORD .....	4
INTRODUCTION .....	6
1 Scope .....	8
2 Normative references .....	10
3 Terms and definitions .....	12
4 General requirement .....	16
5 General conditions for tests .....	16
6 Criteria for reduced testing .....	19
7 Marking and instructions .....	20
8 Power input .....	27
9 Heating and abnormal operation .....	28
10 Electric strength .....	33
11 Electric toys used in water, electric toys used with liquid and electric toys cleaned with liquid .....	34
12 Mechanical strength .....	35
13 Construction .....	36
14 Protection of cords and wires .....	42
15 Components .....	42
16 Screws and connections .....	44
17 Clearances and creepage distances .....	45
18 Resistance to heat and fire .....	46
19 Radiation and similar hazards .....	47
Annex A (normative) Experimental sets .....	48
Annex B (normative) Needle-flame test .....	50
Annex C (normative) Automatic controls and switches .....	51
Annex D (normative) Electric toys with protective electronic circuits .....	53
Annex E (normative) Safety of electric toys incorporating optical radiation sources .....	55
Annex F (informative) Flowcharts showing the assessment of optical radiation safety of LEDs in electric toys .....	70
Annex G (informative) Examples of calculations on LEDs .....	73
Annex H (informative) Explanation of the principles used for the requirements of Annex E .....	78
Annex I (informative) Electric toys generating electromagnetic fields (EMF) .....	86
Annex J (normative) Safety of remote controls for electric ride-on toys .....	87
Annex K (informative) Flow charts showing the application of Clause 9 .....	92
Bibliography .....	95
Index of defined terms and definitions .....	96
Figure 1 – Examples of battery compartment markings .....	21
Figure 2 – Example of an electronic circuit with low-power points .....	31
Figure F.1 – Flow chart addressing UVB and UVC emissions .....	70
Figure F.2 – Flow chart addressing UVA emissions .....	70

Figure F.3 – Flow chart addressing visible emissions.....	71
Figure F.4 – Flow chart addressing IR emissions < 1 000 nm.....	71
Figure F.5 – Flow chart addressing IR emissions ≥ 1 000 nm.....	72
Figure G.1 – Visible light AEL in cd.....	77
Figure H.1 – Blue light AEL in cd.....	82
Figure H.2 – Blue light AEL in $Wsr^{-1}$ .....	82
Figure H.3 – Visible light AEL in cd.....	83
Figure H.4 – Visible light AEL in $Wsr^{-1}$ .....	84
Table 1 – Temperature rise limits for accessible parts.....	33
Table 2 – Quantity of water per battery.....	39
Table 3 – Torque for testing screws and nuts.....	44
Table E.1 – Relaxation factor A for UVA AEL.....	62
Table E.2 – AEL of visible light in candela.....	63
Table E.3 – AEL of visible light in $Wsr^{-1}$ .....	65
Table H.1 – ICNIRP ELVs.....	84

## iTeh STANDARD PREVIEW (standards.iteh.ai)

[SIST EN IEC 62115:2020](https://standards.iteh.ai/catalog/standards/sist/1876323c-6a17-49af-9dea-9ee3ecc2ebf6/sist-en-iec-62115-2020)

<https://standards.iteh.ai/catalog/standards/sist/1876323c-6a17-49af-9dea-9ee3ecc2ebf6/sist-en-iec-62115-2020>

## 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.
- 2) The formal decisions or agreements of IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National Committees.
- 3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
- 4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
- 5) IEC itself does not provide any attestation of conformity. Independent certification bodies provide conformity assessment services and, in some areas, access to IEC marks of conformity. IEC is not responsible for any services carried out by independent certification bodies.
- 6) All users should ensure that they have the latest edition of this publication.
- 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 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.

NOTE 1 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 associated noun are also in bold.

The committee has decided that the contents of this publication 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.

NOTE 2 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 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.

**IMPORTANT – The 'colour inside' logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.**

## 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 ISO 8124 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.

A electric 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.

Electrotechnical Commission (IEC) draws attention to the fact that it is claimed that compliance with this document may involve the use of a patent.

IEC takes no position concerning the evidence, validity and scope of this patent right.

The holder of this patent right has assured the IEC that they are willing to negotiate licences under reasonable and non-discriminatory terms and conditions with applicants throughout the world. In this respect, the statement of the holder of this patent right is registered with IEC. Information may be obtained from:

Dan Gavish and/or Hanna Gavish  
4, Harakafot Street,  
Haifa 3474504 , Israel  
+972 4 8375318  
e-mail address: dan.gavish@gmail.com

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights other than those identified above. IEC shall not be held responsible for identifying any or all such patent rights.

IEC (<http://patents.iec.ch>) maintains an on-line database of patents relevant to its standards. Users are encouraged to consult the database for the most up to date information concerning patents.

## iTeh STANDARD PREVIEW (standards.iteh.ai)

SIST EN IEC 62115:2020

<https://standards.iteh.ai/catalog/standards/sist/1876323c-6a17-49af-9dea-9ee3ecc2ebf6/sist-en-iec-62115-2020>