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SIDETEHNOLOOGIA SEADMED. OSA 1: OHUTUSNÕUDED

Audio/video, information and communication  
technology equipment - Part 1: Safety requirements

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

See Eesti standard EVS-EN 62368-1:2014 sisaldab Euroopa standardi EN 62368-1:2014 ingliskeelset teksti.	This Estonian standard EVS-EN 62368-1:2014 consists of the English text of the European standard EN 62368-1:2014.
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English Version

Audio/video, information and communication technology  
equipment - Part 1: Safety requirements  
(IEC 62368-1:2014 , modified)

Equipements des technologies de l'audio/vidéo, de  
l'information et de la communication - Partie 1: Exigences  
de sécurité  
(CEI 62368-1:2014 , modifiée)

Einrichtungen für Audio/Video, Informations- und  
Kommunikationstechnik - Teil 1: Sicherheitsanforderungen  
(IEC 62368-1:2014 , modifiziert)

This European Standard was approved by CENELEC on 2014-06-20. 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.

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

**CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels**

## Foreword

The text of document 108/521/FDIS, future edition 2 of IEC 62368-1:2014, prepared by IEC/TC 108 "Safety of electronic equipment within the field of audio/video, information technology and communication technology" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 62368-1:2014.

A draft amendment, which covers common modifications to IEC 62368-1:2014, was prepared by CLC/TC 108X, "Safety of electronic equipment within the fields of Audio/Video, Information Technology and Communication Technology" and approved by CENELEC.

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) 2015-06-20
- latest date by which the national standards conflicting with this document have to be withdrawn (dow) 2019-06-20

Clauses, subclauses, notes, tables, figures and annexes which are additional to those in IEC 62368-1:2014 are prefixed "Z".

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 standard covers the Principle Elements of the Safety Objectives for Electrical Equipment Designed for Use within Certain Voltage Limits (LVD - 2006/95/EC).

Requirement of sound pressure for personal music player addressed by the mandate M/452 are covered in 10.6 "Safeguards against acoustic energy sources".

For equipment falling within the scope of directives other than those against which this standard is harmonized, additional requirements from those directives may apply.

### Endorsement notice

The text of the International Standard IEC 62368-1:2014 was approved by CENELEC as a European Standard with agreed common modifications.

#### COMMON MODIFICATIONS

CONTENTS **Add** the following annexes:

Annex ZA (normative)	Normative references to international publications with their corresponding European publications
Annex ZB (normative)	Special national conditions
Annex ZC (informative)	A-deviations
Annex ZD (informative)	IEC and CENELEC code designations for flexible cords

**Delete** all the “country” notes in the reference document according to the following list:

0.2.1	Note	1	Note 3	4.1.15	Note
4.7.3	Note 1 and 2	5.2.2.2	Note	5.4.2.3.2.2 Table 13	Note c
5.4.2.3.2.4	Note 1 and 3	5.4.2.5	Note 2	5.4.5.1	Note
5.5.2.1	Note	5.5.6	Note	5.6.4.2.1	Note 2 and 3
5.7.5	Note	5.7.6.1	Note 1 and 2	10.2.1 Table 39	Note 2, 3 and 4
10.5.3	Note 2	10.6.2.1	Note 3	F.3.3.6	Note 3

For special national conditions, see Annex ZB.

1 **Add** the following note:

NOTE Z1 The use of certain substances in electrical and electronic equipment is restricted within the EU: see Directive 2011/65/EU.

4.Z1 **Add** the following new subclause after 4.9:

To protect against excessive current, short-circuits and earth faults in circuits connected to an a.c. **mains**, protective devices shall be included either as integral parts of the equipment or as parts of the building installation, subject to the following, a), b) and c):

- a) except as detailed in b) and c), protective devices necessary to comply with the requirements of B.3.1 and B.4 shall be included as parts of the equipment;
- b) for components in series with the mains input to the equipment such as the supply cord, appliance coupler, r.f.i. filter and switch, short-circuit and earth fault protection may be provided by protective devices in the building installation;
- c) it is permitted for **pluggable equipment type B** or **permanently connected equipment**, to rely on dedicated overcurrent and short-circuit protection in the building installation, provided that the means of protection, e.g. fuses or circuit breakers, is fully specified in the installation instructions.

If reliance is placed on protection in the building installation, the installation instructions shall so state, except that for **pluggable equipment type A** the building installation shall be regarded as providing protection in accordance with the rating of the wall socket outlet.

5.4.2.3.2.4 **Add** the following to the end of this subclause:

The requirement for interconnection with **external circuit** is in addition given in EN 50491-3:2009.

10.2.1 **Add** the following to <sup>c)</sup> and <sup>d)</sup> in Table 39:

For additional requirements, see 10.5.1.

10.5.1 **Add** the following after the first paragraph:

*For RS 1 compliance is checked by measurement under the following conditions:*

*In addition to the normal operating conditions, all controls adjustable from the outside by hand, by any object such as a tool or a coin, and those internal adjustments or pre-sets which are not locked in a reliable manner, are adjusted so as to give maximum radiation whilst maintaining an intelligible picture for 1 h, at the end of which the measurement is made.*

NOTE Z1 Soldered joints and paint lockings are examples of adequate locking.

*The dose-rate is determined by means of a radiation monitor with an effective area of 10 cm<sup>2</sup>, at any point 10 cm from the outer surface of the apparatus.*

*Moreover, the measurement shall be made under fault conditions causing an increase of the high-voltage, provided an intelligible picture is maintained for 1 h, at the end of which the measurement is made.*

*For RS1, the dose-rate shall not exceed 1 µSv/h taking account of the background level.*

NOTE Z2 These values appear in Directive 96/29/Euratom of 13 May 1996.

10.6.2.1 **Add** the following paragraph to the end of the subclause:

EN 71-1:2011, 4.20 and the related tests methods and measurement distances apply.

10.Z1 **Add** the following new subclause after 10.6.5.

#### **10.Z1 Non-ionizing radiation from radio frequencies in the range 0 to 300 GHz**

The amount of non-ionizing radiation is regulated by European Council Recommendation 1999/519/EC of 12 July 1999 on the limitation of exposure of the general public to electromagnetic fields (0 Hz to 300 GHz).

For intentional radiators, ICNIRP guidelines should be taken into account for Limiting Exposure to Time-Varying Electric, Magnetic, and Electromagnetic Fields (up to 300 GHz). For hand-held and body-mounted devices, attention is drawn to EN 50360 and EN 50566

G.7.1 **Add** the following note:

NOTE Z1 The harmonized code designations corresponding to the IEC cord types are given in Annex ZD.

Bibliography **Add** the following standards:

**Add** the following notes for the standards indicated:

IEC 60130-9	NOTE	Harmonized as EN 60130-9.
IEC 60269-2	NOTE	Harmonized as HD 60269-2.
IEC 60309-1	NOTE	Harmonized as EN 60309-1.
IEC 60364	NOTE	some parts harmonized in HD 384/HD 60364 series.
IEC 60601-2-4	NOTE	Harmonized as EN 60601-2-4.
IEC 60664-5	NOTE	Harmonized as EN 60664-5.
IEC 61032:1997	NOTE	Harmonized as EN 61032:1998 (not modified).
IEC 61508-1	NOTE	Harmonized as EN 61508-1.
IEC 61558-2-1	NOTE	Harmonized as EN 61558-2-1.
IEC 61558-2-4	NOTE	Harmonized as EN 61558-2-4.
IEC 61558-2-6	NOTE	Harmonized as EN 61558-2-6.
IEC 61643-1	NOTE	Harmonized as EN 61643-1.
IEC 61643-21	NOTE	Harmonized as EN 61643-21.
IEC 61643-311	NOTE	Harmonized as EN 61643-311.
IEC 61643-321	NOTE	Harmonized as EN 61643-321.
IEC 61643-331	NOTE	Harmonized as EN 61643-331.

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## CONTENTS

FOREWORD.....	19
INTRODUCTION.....	22
0 Principles of this product safety standard .....	22
0.1 Objective .....	22
0.2 Persons .....	22
0.2.1 General .....	22
0.2.2 Ordinary person.....	22
0.2.3 Instructed person.....	22
0.2.4 Skilled person.....	22
0.3 Model for pain and injury.....	22
0.4 Energy sources.....	23
0.5 Safeguards .....	24
0.5.1 General .....	24
0.5.2 Equipment safeguard.....	25
0.5.3 Installation safeguard .....	25
0.5.4 Personal safeguard.....	25
0.5.5 Behavioural safeguards .....	26
0.5.6 Safeguards during ordinary or instructed person service conditions .....	27
0.5.7 Equipment safeguards during skilled person service conditions .....	27
0.5.8 Examples of safeguard characteristics .....	27
0.6 Electrically-caused pain or injury (electric shock).....	28
0.6.1 Models for electrically-caused pain or injury .....	28
0.6.2 Models for protection against electrically-caused pain or injury.....	29
0.7 Electrically-caused fire.....	30
0.7.1 Models for electrically-caused fire.....	30
0.7.2 Models for protection against electrically-caused fire .....	31
0.8 Injury caused by hazardous substances .....	31
0.9 Mechanically-caused injury .....	32
0.10 Thermally-caused injury (skin burn) .....	32
0.10.1 Models for thermally-caused injury .....	32
0.10.2 Models for protection against thermally-caused pain or injury .....	33
0.11 Radiation-caused injury .....	34
1 Scope.....	36
2 Normative references .....	37
3 Terms, definitions and abbreviations .....	43
3.1 Energy source abbreviations.....	43
3.2 Other abbreviations .....	43
3.3 Terms and definitions.....	44
3.3.1 Circuit terms .....	46
3.3.2 Enclosure terms.....	46
3.3.3 Equipment terms .....	47
3.3.4 Flammability terms .....	47
3.3.5 Insulation.....	49
3.3.6 Miscellaneous.....	49



3.3.7	Operating and fault conditions .....	51
3.3.8	Persons .....	52
3.3.9	Potential ignition sources.....	52
3.3.10	Ratings .....	53
3.3.11	Safeguards .....	53
3.3.12	Spacings .....	55
3.3.13	Temperature controls.....	55
3.3.14	Voltages and currents.....	55
3.3.15	Classes of equipment with respect to protection from electric shock.....	56
3.3.16	Chemical terms.....	57
3.3.17	Batteries .....	57
4	General requirements .....	59
4.1	General.....	59
4.1.1	Application of requirements and acceptance of materials, components and subassemblies .....	59
4.1.2	Use of components .....	59
4.1.3	Equipment design and construction .....	59
4.1.4	Equipment installation .....	60
4.1.5	Constructions and components not specifically covered.....	60
4.1.6	Orientation during transport and use.....	60
4.1.7	Choice of criteria .....	60
4.1.8	Conductive liquids .....	60
4.1.9	Electrical measuring instruments .....	60
4.1.10	Temperature measurements .....	60
4.1.11	Steady state conditions.....	61
4.1.12	Hierarchy of safeguards.....	61
4.1.13	Examples mentioned in the standard .....	61
4.1.14	Tests on parts or samples separate from the end-product.....	61
4.1.15	Markings and instructions .....	61
4.2	Energy source classifications .....	61
4.2.1	Class 1 energy source .....	61
4.2.2	Class 2 energy source .....	62
4.2.3	Class 3 energy source .....	62
4.2.4	Energy source classification by declaration.....	62
4.3	Protection against energy sources .....	62
4.3.1	General .....	62
4.3.2	Safeguards for protection of an ordinary person .....	62
4.3.3	Safeguards for protection of an instructed person.....	64
4.3.4	Safeguards for protection of a skilled person .....	64
4.3.5	Safeguards in a restricted access area .....	65
4.4	Safeguards .....	66
4.4.1	Equivalent materials or components .....	66
4.4.2	Composition of a safeguard .....	66
4.4.3	Accessible parts of a safeguard .....	66
4.4.4	Safeguard robustness.....	66
4.5	Explosion.....	68
4.5.1	General .....	68
4.5.2	Requirements .....	68

4.6	Fixing of conductors.....	69
4.6.1	Requirements .....	69
4.6.2	Compliance criteria.....	69
4.7	Equipment for direct insertion into mains socket-outlets .....	69
4.7.1	General .....	69
4.7.2	Requirements .....	69
4.7.3	Compliance criteria.....	70
4.8	Products containing lithium coin / button cell batteries .....	70
4.8.1	General .....	70
4.8.2	Instructional safeguard .....	70
4.8.3	Construction .....	70
4.8.4	Tests .....	71
4.8.5	Compliance criteria.....	71
4.9	Likelihood of fire or shock due to entry of conductive objects .....	72
5	Electrically-caused injury.....	72
5.1	General.....	72
5.2	Classification and limits of electrical energy sources.....	73
5.2.1	Electrical energy source classifications.....	73
5.2.2	Electrical energy source ES1 and ES2 limits.....	73
5.3	Protection against electrical energy sources .....	79
5.3.1	General .....	79
5.3.2	Accessibility to electrical energy sources and safeguards.....	79
5.4	Insulation materials and requirements.....	81
5.4.1	General .....	81
5.4.2	Clearances .....	87
5.4.3	Creepage distances.....	97
5.4.4	Solid insulation .....	101
5.4.5	Antenna terminal insulation.....	110
5.4.6	Insulation of internal wire as a part of a supplementary safeguard .....	111
5.4.7	Tests for semiconductor components and for cemented joints .....	111
5.4.8	Humidity conditioning .....	111
5.4.9	Electric strength test.....	112
5.4.10	Safeguards against transient voltages from external circuits.....	115
5.4.11	Separation between external circuits and earth.....	117
5.5	Components as safeguards.....	118
5.5.1	General .....	118
5.5.2	Capacitors and RC units .....	118
5.5.3	Transformers .....	120
5.5.4	Optocouplers .....	120
5.5.5	Relays .....	120
5.5.6	Resistors .....	120
5.5.7	SPDs.....	120
5.5.8	Insulation between the mains and an external circuit consisting of a coaxial cable .....	121
5.6	Protective conductor .....	121
5.6.1	General .....	121
5.6.2	Requirements for protective conductors .....	121
5.6.3	Requirements for protective earthing conductors .....	122

	5.6.4	Requirements for protective bonding conductors .....	123
	5.6.5	Terminals for protective conductors .....	125
	5.6.6	Resistance of the protective bonding system .....	126
	5.6.7	Reliable earthing .....	128
	5.7	Prospective touch voltage, touch current and protective conductor current.....	128
	5.7.1	General .....	128
	5.7.2	Measuring devices and networks .....	128
	5.7.3	Equipment set-up, supply connections and earth connections.....	128
	5.7.4	Earthed accessible conductive parts .....	129
	5.7.5	Protective conductor current .....	129
	5.7.6	Prospective touch voltage and touch current due to external circuits.....	130
	5.7.7	Summation of touch currents from external circuits .....	131
6		Electrically-caused fire .....	133
	6.1	General.....	133
	6.2	Classification of power sources (PS) and potential ignition sources (PIS) .....	133
	6.2.1	General .....	133
	6.2.2	Power source circuit classifications .....	133
	6.2.3	Classification of potential ignition sources .....	136
	6.3	Safeguards against fire under normal operating conditions and abnormal operating conditions.....	137
	6.3.1	Requirements .....	137
	6.3.2	Compliance criteria .....	138
	6.4	Safeguards against fire under single fault conditions.....	138
	6.4.1	General .....	138
	6.4.2	Reduction of the likelihood of ignition under single fault conditions in PS1 circuits.....	138
	6.4.3	Reduction of the likelihood of ignition under single fault conditions in PS2 circuits and PS3 circuits .....	138
	6.4.4	Control of fire spread in PS1 circuits.....	140
	6.4.5	Control of fire spread in PS2 circuits.....	140
	6.4.6	Control of fire spread in a PS3 circuit .....	141
	6.4.7	Separation of combustible materials from a PIS.....	142
	6.4.8	Fire enclosures and fire barriers .....	144
	6.5	Internal and external wiring.....	149
	6.5.1	Requirements .....	149
	6.5.2	Compliance criteria.....	149
	6.5.3	Requirements for interconnection to building wiring. ....	149
	6.5.4	Compliance criteria.....	150
	6.6	Safeguards against fire due to the connection of additional equipment.....	150
7		Injury caused by hazardous substances .....	150
	7.1	General.....	150
	7.2	Reduction of exposure to hazardous substances.....	150
	7.3	Ozone exposure.....	150
	7.4	Use of personal safeguards (PPE) .....	150
	7.5	Use of instructional safeguards and instructions .....	151
	7.6	Batteries and their protection circuits .....	151
8		Mechanically-caused injury.....	151
	8.1	General.....	151

8.2	Mechanical energy source classifications.....	151
8.2.1	General classification .....	151
8.2.2	MS1.....	153
8.2.3	MS2.....	153
8.2.4	MS3.....	153
8.3	Safeguards against mechanical energy sources.....	153
8.4	Safeguards against parts with sharp edges and corners .....	153
8.4.1	Requirements .....	153
8.4.2	Compliance criteria.....	154
8.5	Safeguards against moving parts .....	154
8.5.1	Requirements .....	154
8.5.2	Instructional safeguard requirements .....	154
8.5.3	Compliance criteria.....	155
8.5.4	Special categories of equipment comprising moving parts .....	155
8.5.5	High pressure lamps.....	157
8.6	Stability of equipment .....	158
8.6.1	Requirements .....	158
8.6.2	Static stability .....	159
8.6.3	Relocation stability test.....	160
8.6.4	Glass slide test.....	160
8.6.5	Horizontal force test and compliance criteria.....	161
8.7	Equipment mounted to a wall or ceiling .....	161
8.7.1	Requirements .....	161
8.7.2	Test methods.....	161
8.7.3	Compliance criteria.....	163
8.8	Handle strength .....	163
8.8.1	General .....	163
8.8.2	Test method and compliance criteria .....	163
8.9	Wheels or casters attachment requirements.....	163
8.9.1	General .....	163
8.9.2	Test method .....	164
8.10	Carts, stands, and similar carriers.....	164
8.10.1	General .....	164
8.10.2	Marking and instructions .....	164
8.10.3	Cart, stand or carrier loading test and compliance criteria.....	165
8.10.4	Cart, stand or carrier impact test.....	165
8.10.5	Mechanical stability .....	165
8.10.6	Thermoplastic temperature stability .....	166
8.11	Mounting means for rack mounted equipment .....	166
8.11.1	General .....	166
8.11.2	Requirements .....	166
8.11.3	Mechanical strength test.....	167
8.11.4	Mechanical strength test, 250 N, including end stops.....	167
8.11.5	Compliance criteria.....	167
8.12	Telescoping or rod antennas.....	167
9	Thermal burn injury .....	168
9.1	General.....	168
9.2	Thermal energy source classifications.....	168
9.2.1	General .....	168

9.2.2	TS1 .....	168
9.2.3	TS2 .....	168
9.2.4	TS3 .....	168
9.2.5	Test method and compliance criteria .....	168
9.2.6	Touch temperature levels .....	169
9.3	Safeguards against thermal energy sources .....	170
9.4	Requirements for safeguards .....	170
9.4.1	Equipment safeguard .....	170
9.4.2	Instructional safeguard .....	170
10	Radiation .....	170
10.1	General .....	170
10.2	Radiation energy source classifications .....	170
10.2.1	General classification .....	170
10.2.2	RS1 .....	172
10.2.3	RS2 .....	172
10.2.4	RS3 .....	172
10.3	Safeguards against laser radiation .....	172
10.3.1	Requirements .....	172
10.3.2	Compliance criteria .....	172
10.4	Safeguards against visible, infra-red, and ultra-violet radiation .....	173
10.4.1	General .....	173
10.4.2	Instructional safeguard .....	173
10.4.3	Compliance criteria .....	174
10.5	Safeguards against x-radiation .....	174
10.5.1	Requirements .....	174
10.5.2	Compliance criteria .....	174
10.5.3	Test method .....	174
10.6	Safeguards against acoustic energy sources .....	175
10.6.1	General .....	175
10.6.2	Classification .....	176
10.6.3	Measurement methods .....	176
10.6.4	Protection of persons .....	177
10.6.5	Requirements for listening devices (headphones, earphones, etc.) .....	177
Annex A (informative) Examples of equipment within the scope of this standard .....		179
Annex B (normative) Normal operating condition tests, abnormal operating condition tests and single fault condition tests .....		180
B.1	General .....	180
B.1.1	Introduction .....	180
B.1.2	Test applicability .....	180
B.1.3	Type of test .....	180
B.1.4	Test samples .....	180
B.1.5	Compliance by inspection of relevant data .....	180
B.1.6	Temperature measurement conditions .....	180
B.2	Normal operating conditions .....	181
B.2.1	General .....	181
B.2.2	Supply frequency .....	181
B.2.3	Supply voltage .....	181
B.2.4	Normal operating voltages .....	182

B.2.5	Input test .....	182
B.2.6	Operating temperature measurement conditions .....	183
B.2.7	Battery charging and discharging under normal operating conditions .....	183
B.3	Simulated abnormal operating conditions .....	184
B.3.1	General .....	184
B.3.2	Covering of ventilation openings .....	184
B.3.3	DC mains polarity test .....	185
B.3.4	Setting of voltage selector .....	185
B.3.5	Maximum load at output terminals .....	185
B.3.6	Reverse battery polarity .....	185
B.3.7	Audio amplifier abnormal operating conditions .....	185
B.3.8	Compliance criteria during and after abnormal operating conditions .....	185
B.4	Simulated single fault conditions .....	185
B.4.1	General .....	185
B.4.2	Temperature controlling device .....	186
B.4.3	Motor tests .....	186
B.4.4	Functional insulation .....	186
B.4.5	Short-circuit and interruption of electrodes in tubes and semiconductors .....	187
B.4.6	Short-circuit or disconnection of passive components .....	187
B.4.7	Continuous operation of components .....	187
B.4.8	Compliance criteria during and after single fault conditions .....	188
B.4.9	Battery charging and discharging under single fault conditions .....	188
Annex C (normative)	UV radiation .....	189
C.1	Protection of materials in equipment from UV radiation .....	189
C.1.1	General .....	189
C.1.2	Requirements .....	189
C.1.3	Test method and compliance criteria .....	189
C.2	UV light conditioning test .....	190
C.2.1	Test apparatus .....	190
C.2.2	Mounting of test samples .....	190
C.2.3	Carbon-arc light-exposure test .....	190
C.2.4	Xenon-arc light-exposure test .....	190
Annex D (normative)	Test generators .....	191
D.1	Impulse test generators .....	191
D.2	Antenna interface test generator .....	192
D.3	Electronic pulse generator .....	192
Annex E (normative)	Test conditions for equipment containing audio amplifiers .....	193
E.1	Audio amplifier normal operating conditions .....	193
E.2	Audio amplifier abnormal operating conditions .....	194
Annex F (normative)	Equipment markings, instructions, and instructional safeguards .....	195
F.1	General .....	195
F.2	Letter symbols and graphical symbols .....	195
F.2.1	Letter symbols .....	195
F.2.2	Graphical symbols .....	195
F.2.3	Compliance criteria .....	195
F.3	Equipment markings .....	195

F.3.1	Equipment marking locations .....	195
F.3.2	Equipment identification markings .....	196
F.3.3	Equipment rating markings .....	196
F.3.4	Voltage setting device .....	198
F.3.5	Markings on terminals and operating devices.....	198
F.3.6	Equipment markings related to equipment classification .....	199
F.3.7	Equipment IP rating marking.....	200
F.3.8	External power supply output marking .....	200
F.3.9	Durability, legibility and permanence of markings .....	201
F.3.10	Test for the permanence of markings .....	201
F.4	Instructions .....	201
F.5	Instructional safeguards .....	202
Annex G (normative)	Components .....	205
G.1	Switches .....	205
G.1.1	General .....	205
G.1.2	Requirements .....	205
G.1.3	Test method and compliance criteria .....	206
G.2	Relays .....	206
G.2.1	Requirements .....	206
G.2.2	Overload test.....	207
G.2.3	Relay controlling connectors supplying power to other equipment.....	207
G.2.4	Test method and compliance criteria .....	207
G.3	Protective devices.....	207
G.3.1	Thermal cut-offs .....	207
G.3.2	Thermal links .....	208
G.3.3	PTC thermistors.....	209
G.3.4	Overcurrent protective devices .....	210
G.3.5	Safeguard components not mentioned in G.3.1 to G.3.4 .....	210
G.4	Connectors .....	210
G.4.1	Clearance and creepage distance requirements .....	210
G.4.2	Mains connectors .....	210
G.4.3	Connectors other than mains connectors .....	211
G.5	Wound components .....	211
G.5.1	Wire insulation in wound components .....	211
G.5.2	Endurance test .....	211
G.5.3	Transformers .....	213
G.5.4	Motors .....	216
G.6	Wire insulation .....	220
G.6.1	General .....	220
G.6.2	Solvent-based enamel winding insulation.....	221
G.7	Mains supply cords .....	221
G.7.1	General .....	221
G.7.2	Cross sectional area .....	222
G.7.3	Cord anchorages and strain relief for non-detachable power supply cords .....	224
G.7.4	Cord entry .....	225
G.7.5	Non-detachable cord bend protection .....	225
G.7.6	Supply wiring space.....	226

G.8	Varistors .....	227
	G.8.1 General .....	227
	G.8.2 Safeguards against electric shock .....	227
	G.8.3 Safeguards against fire .....	228
G.9	Integrated circuit (IC) current limiters .....	230
	G.9.1 Requirements .....	230
	G.9.2 Test program 1 .....	230
	G.9.3 Test program 2 .....	231
	G.9.4 Test program 3 .....	231
	G.9.5 Compliance criteria .....	232
G.10	Resistors .....	232
	G.10.1 General .....	232
	G.10.2 Resistor test .....	232
	G.10.3 Resistors serving as safeguards between the mains and an external circuit consisting of a coaxial cable .....	232
G.11	Capacitors and RC units .....	233
	G.11.1 General .....	233
	G.11.2 Conditioning of capacitors and RC units .....	233
	G.11.3 Rules for selecting capacitors .....	233
	G.11.4 Examples of the application of capacitors .....	234
G.12	Optocouplers .....	237
G.13	Printed boards .....	237
	G.13.1 General .....	237
	G.13.2 Uncoated printed boards .....	237
	G.13.3 Coated printed boards .....	237
	G.13.4 Insulation between conductors on the same inner surface .....	239
	G.13.5 Insulation between conductors on different surfaces .....	240
	G.13.6 Tests on coated printed boards .....	240
G.14	Coatings on component terminals .....	242
	G.14.1 Requirements .....	242
	G.14.2 Test method and compliance criteria .....	242
G.15	Pressurized liquid filled components .....	243
	G.15.1 General .....	243
	G.15.2 Requirements .....	243
	G.15.3 Test methods and compliance criteria .....	243
	G.15.4 Compliance criteria .....	244
G.16	IC including capacitor discharge function (ICX) .....	244
	G.16.1 Requirements .....	244
	G.16.2 Tests .....	245
	G.16.3 Compliance criteria .....	245
Annex H (normative)	Criteria for telephone ringing signals .....	246
	H.1 General .....	246
	H.2 Method A .....	246
	H.3 Method B .....	249
	H.3.1 Ringing signal .....	249
	H.3.2 Tripping device and monitoring voltage .....	249
Annex I (informative)	Overvoltage categories (see IEC 60364-4-44) .....	251
Annex J (normative)	Insulated winding wires for use without interleaved insulation .....	252
	J.1 General .....	252



J.2	Type tests .....	252
J.2.1	General .....	252
J.2.2	Electric strength .....	252
J.2.3	Flexibility and adherence .....	253
J.2.4	Heat shock .....	253
J.2.5	Retention of electric strength after bending.....	254
J.3	Testing during manufacturing .....	254
J.3.1	General .....	254
J.3.2	Routine test .....	254
J.3.3	Sampling test.....	254
Annex K (normative)	Safety interlocks .....	255
K.1	General.....	255
K.1.1	General requirements .....	255
K.1.2	Test method and compliance criteria .....	255
K.2	Components of the safety interlock safeguard mechanism .....	256
K.3	Inadvertent change of operating mode .....	256
K.4	Interlock safeguard override.....	256
K.5	Fail-safe .....	256
K.5.1	Requirement.....	256
K.5.2	Test method and compliance criteria .....	256
K.6	Mechanically operated safety interlocks .....	257
K.6.1	Endurance requirement .....	257
K.6.2	Test method and compliance criteria .....	257
K.7	Interlock circuit isolation .....	257
K.7.1	Separation distances for contact gaps and interlock circuit elements.....	257
K.7.2	Overload test.....	257
K.7.3	Endurance test .....	258
K.7.4	Electric strength test.....	258
Annex L (normative)	Disconnect devices.....	259
L.1	General requirements .....	259
L.2	Permanently connected equipment .....	259
L.3	Parts that remain energized .....	259
L.4	Single-phase equipment.....	259
L.5	Three-phase equipment .....	260
L.6	Switches as disconnect devices .....	260
L.7	Plugs as disconnect devices .....	260
L.8	Multiple power sources .....	260
L.9	Compliance criteria .....	261
Annex M (normative)	Equipment containing batteries and their protection circuits.....	262
M.1	General requirements .....	262
M.2	Safety of batteries and their cells .....	262
M.2.1	Requirements .....	262
M.2.2	Compliance criteria.....	262
M.3	Protection circuits for batteries provided within the equipment .....	263
M.3.1	Requirements .....	263
M.3.2	Test method .....	263
M.3.3	Compliance criteria.....	264

M.4	Additional safeguards for equipment containing a secondary lithium battery .....	264
M.4.1	General .....	264
M.4.2	Charging safeguards .....	264
M.4.3	Fire enclosure.....	265
M.4.4	Drop test of equipment containing a secondary lithium battery.....	266
M.5	Risk of burn due to short-circuit during carrying .....	267
M.5.1	Requirements .....	267
M.5.2	Test method and compliance criteria .....	267
M.6	Prevention of short-circuits and protection from other effects of electric current.....	267
M.6.1	Short-circuits .....	267
M.6.2	Leakage currents.....	268
M.7	Risk of explosion from lead acid and NiCd batteries.....	268
M.7.1	Ventilation preventing an explosive gas concentration .....	268
M.7.2	Test method and compliance criteria .....	268
M.8	Protection against internal ignition from external spark sources of batteries with aqueous electrolyte .....	270
M.8.1	General .....	270
M.8.2	Test method .....	270
M.9	Preventing electrolyte spillage .....	273
M.9.1	Protection from electrolyte spillage .....	273
M.9.2	Tray for preventing electrolyte spillage .....	273
M.10	Instructions to prevent reasonably foreseeable misuse .....	273
Annex N (normative)	Electrochemical potentials (V).....	274
Annex O (normative)	Measurement of creepage distances and clearances .....	275
Annex P (normative)	Safeguards against conductive objects .....	283
P.1	General.....	283
P.2	Safeguards against entry or consequences of entry of a foreign object .....	283
P.2.1	General .....	283
P.2.2	Safeguards against entry of a foreign object .....	283
P.2.3	Safeguards against the consequences of entry of a foreign object .....	284
P.3	Safeguards against spillage of internal liquids.....	286
P.3.1	General .....	286
P.3.2	Determination of spillage consequences .....	286
P.3.3	Spillage safeguards .....	286
P.3.4	Compliance criteria.....	287
P.4	Metallized coatings and adhesives securing parts .....	287
P.4.1	General .....	287
P.4.2	Tests .....	287
Annex Q (normative)	Circuits intended for interconnection with building wiring .....	290
Q.1	Limited power source .....	290
Q.1.1	Requirements .....	290
Q.1.2	Test method and compliance criteria .....	290
Q.2	Test for external circuits – paired conductor cable .....	291
Annex R (normative)	Limited short-circuit test.....	292
R.1	General.....	292
R.2	Test setup.....	292

R.3	Test method.....	292
R.4	Compliance criteria .....	293
Annex S	(normative) Tests for resistance to heat and fire .....	294
S.1	Flammability test for fire enclosure and fire barrier materials of equipment where the steady-state power does not exceed 4 000 W .....	294
S.2	Flammability test for fire enclosure and fire barrier integrity .....	295
S.3	Flammability tests for the bottom of a fire enclosure .....	296
S.3.1	Mounting of samples.....	296
S.3.2	Test method and compliance criteria .....	296
S.4	Flammability classification of materials .....	296
S.5	Flammability test for fire enclosure materials of equipment with a steady-state power exceeding 4 000 W .....	297
Annex T	(normative) Mechanical strength tests.....	299
T.1	General.....	299
T.2	Steady force test, 10 N .....	299
T.3	Steady force test, 30 N .....	299
T.4	Steady force test, 100 N .....	299
T.5	Steady force test, 250 N .....	299
T.6	Enclosure impact test.....	299
T.7	Drop test.....	300
T.8	Stress relief test.....	300
T.9	Impact test.....	301
T.10	Glass fragmentation test .....	301
T.11	Test for telescoping or rod antennas .....	302
Annex U	(normative) Mechanical strength of CRTs and protection against the effects of implosion.....	303
U.1	General.....	303
U.2	Test method and compliance criteria for non-intrinsically protected CRTs .....	304
U.3	Protective screen .....	304
Annex V	(normative) Determination of accessible parts .....	305
V.1	Accessible parts of equipment .....	305
V.1.1	General .....	305
V.1.2	Test method 1 – Surfaces and openings tested with jointed test probes .....	305
V.1.3	Test method 2 – Openings tested with straight unjointed test probes .....	305
V.1.4	Test method 3 – Plugs, jacks, connectors .....	308
V.1.5	Test method 4 – Slot openings .....	309
V.1.6	Test method 5 – Terminals intended to be used by an ordinary person .....	309
V.2	Accessible part criterion.....	310
Annex W	(informative) Comparison of terms introduced in this standard .....	311
W.1	General.....	311
W.2	Comparison of terms.....	311
Bibliography	.....	324
Figure 1	– Three block model for pain and injury.....	23
Figure 2	– Three block model for safety .....	24
Figure 3	– Schematic and model for electrically-caused pain or injury.....	29

Figure 4 – Model for protection against electrically-caused pain or injury .....	29
Figure 5 – Model for electrically-caused fire .....	30
Figure 6 – Models for protection against fire .....	31
Figure 7 – Schematic and model for thermally-caused injury .....	33
Figure 8 – Model for protection against thermally-caused injury .....	34
Figure 9 – Model for protection of an ordinary person against a class 1 energy source .....	62
Figure 10 – Model for protection of an ordinary person against a class 2 energy source .....	63
Figure 11 – Model for protection of an ordinary person against a class 2 energy source during ordinary person servicing conditions .....	63
Figure 12 – Model for protection of an ordinary person against a class 3 energy source .....	63
Figure 13 – Model for protection of an instructed person against a class 1 energy source .....	64
Figure 14 – Model for protection of an instructed person against a class 2 energy source .....	64
Figure 15 – Model for protection of an instructed person against a class 3 energy source .....	64
Figure 16 – Model for protection of a skilled person against a class 1 energy source .....	65
Figure 17 – Model for protection of a skilled person against a class 2 energy source .....	65
Figure 18 – Model for protection of a skilled person against a class 3 energy source .....	65
Figure 19 – Model for protection of a skilled person against class 3 energy sources during equipment servicing conditions .....	65
Figure 20 – Test hook .....	72
Figure 21 – Illustration showing ES limits for voltage and current .....	74
Figure 22 – Maximum values for combined a.c. current and d.c. current .....	76
Figure 23 – Maximum values for combined a.c. voltage and d.c. voltage .....	76
Figure 24 – Contact requirements to bare internal conductive parts .....	80
Figure 25 – Mandrel .....	105
Figure 26 – Initial position of mandrel .....	106
Figure 27 – Final position of mandrel .....	106
Figure 28 – Position of metal foil on insulating material .....	106
Figure 29 – Example of electric strength test instrument for solid insulation .....	114
Figure 30 – Application points of test voltage .....	115
Figure 31 – Test for separation between an external circuit and earth .....	118
Figure 32 – Test circuit for touch current of single-phase equipment .....	131
Figure 33 – Test circuit for touch current of three-phase equipment .....	131
Figure 34 – Power measurement for worst-case fault .....	134
Figure 35 – Power measurement for worst-case power source fault .....	135
Figure 36 – Illustration of power source classification .....	136
Figure 37 – Minimum separation requirements from an arcing PIS .....	142
Figure 38 – Extended separation requirements from a PIS .....	142
Figure 39 – Rotated separation requirements due to forced air flow .....	143
Figure 40 – Deflected separation requirements from a PIS when a fire barrier is used .....	144
Figure 41 – Top openings .....	146
Figure 42 – Bottom openings .....	147
Figure 43 – Limits for moving fan blades made of non-plastic materials .....	152

Figure 44 – Limits for moving fan blades made of plastic materials .....	152
Figure D.1 – 1,2/50 $\mu$ s and 10/700 $\mu$ s voltage impulse generator .....	191
Figure D.2 – Antenna interface test generator circuit .....	192
Figure D.3 – Example of an electronic pulse generator .....	192
Figure E.1 – Band-pass filter for wide-band noise measurement .....	194
Figure F.1 – Example of an instructional safeguard .....	203
Figure G.1 – Determination of arithmetic average temperature .....	215
Figure G.2 – Thermal ageing time .....	241
Figure G.3 – Abrasion resistance test for coating layers .....	242
Figure H.1 – Definition of ringing period and cadence cycle .....	247
Figure H.2 – $I_{TS1}$ limit curve for cadenced ringing signal .....	248
Figure H.3 – Peak and peak-to-peak currents .....	248
Figure H.4 – Ringing voltage trip criteria .....	250
Figure M.1 – Distance $d$ as a function of the rated capacity for various charge currents $I$ (mA/Ah) .....	272
Figure O.1 – Narrow groove .....	275
Figure O.2 – Wide groove .....	275
Figure O.3 – V-shaped groove .....	276
Figure O.4 – Intervening unconnected conductive part .....	276
Figure O.5 – Rib .....	276
Figure O.6 – Uncemented joint with narrow groove .....	276
Figure O.7 – Uncemented joint with wide groove .....	277
Figure O.8 – Uncemented joint with narrow and wide grooves .....	277
Figure O.9 – Narrow recess .....	278
Figure O.10 – Wide recess .....	278
Figure O.11 – Coating around terminals .....	278
Figure O.12 – Coating over printed wiring .....	279
Figure O.13 – Example of measurements in an enclosure of insulating material .....	279
Figure O.14 – Cemented joints in multi-layer printed boards .....	280
Figure O.15 – Device filled with insulating compound .....	280
Figure O.16 – Partitioned bobbin .....	280
Figure O.17 – Materials with different CTI values .....	281
Figure O.18 – Materials with different CTI values having an air gap of less than $X$ mm .....	281
Figure O.19 – Materials with different CTI values having an air groove of less than $X$ mm .....	282
Figure O.20 – Materials with different CTI values having an air groove not smaller than $X$ mm .....	282
Figure P.1 – Examples of cross-sections of designs of top openings which prevent vertical entry .....	284
Figure P.2 – Examples of cross-sections of designs of side opening louvres which prevent vertical entry .....	284
Figure P.3 – Internal volume locus for foreign object entry .....	285
Figure T.1 – Impact test using sphere .....	300
Figure V.1 – Jointed test probe for equipment likely to be accessible to children .....	306
Figure V.2 – Jointed test probe for equipment not likely to be accessible to children .....	307

Figure V.3 – Blunt probe .....	308
Figure V.4 – Wedge probe .....	309
Figure V.5 – Terminal probe .....	310
Table 1 – Response to energy class .....	23
Table 2 – Examples of body response or property damage related to energy sources .....	24
Table 3 – Examples of safeguard characteristics .....	28
Table 4 – Electrical energy source limits for steady-state ES1 and ES2 .....	75
Table 5 – Electrical energy source limits for a charged capacitor .....	77
Table 6 – Voltage limits for single pulses .....	78
Table 7 – Current limits for single pulses .....	78
Table 8 – Electrical energy source limits for repetitive pulses .....	79
Table 9 – Minimum air gap distance .....	80
Table 10 – Temperature limits for materials, components and systems .....	83
Table 11 – Minimum clearances for voltages with frequencies up to 30 kHz .....	89
Table 12 – Minimum clearances for voltages with frequencies above 30 kHz .....	90
Table 13 – Mains transient voltages .....	91
Table 14 – External circuit transient voltages .....	93
Table 15 – Minimum clearances using required withstand voltage .....	95
Table 16 – Electric strength test voltages .....	96
Table 17 – Multiplication factors for clearances and test voltages .....	96
Table 18 – Minimum creepage distances for basic insulation and supplementary insulation in mm .....	100
Table 19 – Minimum values of creepage distances (in mm) for frequencies higher than 30 kHz and up to 400 kHz .....	101
Table 20 – Tests for insulation in non-separable layers .....	104
Table 21 – Electric field strength $E_P$ for some commonly used materials .....	108
Table 22 – Reduction factors for the value of breakdown electric field strength $E_P$ at higher frequencies .....	109
Table 23 – Reduction factors for the value of breakdown electric field strength $E_P$ at higher frequencies for thin materials .....	109
Table 24 – Values for insulation resistance .....	110
Table 25 – Distance through insulation of internal wiring .....	111
Table 26 – Test voltages for electric strength tests based on transient voltages .....	113
Table 27 – Test voltages for electric strength tests based on peak working voltages .....	113
Table 28 – Test voltages for electric strength tests based on temporary overvoltages .....	114
Table 29 – Test values for electric strength tests .....	116
Table 30 – Protective earthing conductor sizes for reinforced safeguards for permanently connected equipment .....	123
Table 31 – Minimum protective bonding conductor size of copper conductors .....	124
Table 32 – Sizes of terminals for protective conductors .....	126
Table 33 – Test duration, mains connected equipment .....	127
Table 34 – Size and spacing of holes in metal bottoms of fire enclosures .....	148
Table 35 – Classification for various categories of mechanical energy sources .....	151
Table 36 – Overview of requirements and tests .....	158

Table 37 – Torque to be applied to screws.....	162
Table 38 – Touch temperature limits for accessible parts.....	169
Table 39 – Radiation energy source classifications.....	171
Table C.1 – Minimum property retention limits after UV exposure.....	189
Table D.1 – Component values for Figure D.1 and Figure D.2.....	192
Table E.1 – Audio signal electrical energy source classes and safeguards.....	194
Table F.1 – Instructional safeguard element description and examples.....	203
Table F.2 – Examples of markings, instructions, and instructional safeguards.....	204
Table G.1 – Peak surge current.....	206
Table G.2 – Test temperature and testing time (days) per cycle.....	212
Table G.3 – Temperature limits for transformer windings and for motor windings (except for the motor running overload test).....	215
Table G.4 – Temperature limits for running overload tests.....	217
Table G.5 – Sizes of conductors.....	223
Table G.6– Strain relief test force.....	224
Table G.7 – Varistor overload and temporary overvoltage test.....	228
Table G.8 – Capacitor ratings according to IEC 60384-14.....	234
Table G.9 – Examples of the application of Y capacitors based on the test voltages of Table 26.....	235
Table G.10 – Examples of the application of Y capacitors based on the test voltages of Table 27.....	236
Table G.11 – Examples of the application of Y capacitors based on the test voltages of Table 28.....	236
Table G.12 – Examples of the application of X capacitors, line to line or line to neutral.....	237
Table G.13 – Minimum separation distances for coated printed boards.....	239
Table G.14 – Insulation in printed boards.....	240
Table I.1 – Overvoltage categories.....	251
Table J.1 – Mandrel diameter.....	253
Table J.2 – Oven temperature.....	254
Table M.1 – Values of $f_g$ and $f_s$ .....	269
Table O.1 – Value of $X$ .....	275
Table Q.1 – Limits for inherently limited power sources.....	290
Table Q.2 – Limits for power sources not inherently limited (overcurrent protective device required).....	291
Table S.1 – Foamed materials.....	297
Table S.2 – Rigid materials.....	297
Table S.3 – Very thin materials.....	297
Table T.1 – Impact force.....	301
Table T.2 – Torque values for end-piece test.....	302
Table W.1 – Comparison of terms and definitions in IEC 60664-1:2007 and IEC 62368-1.....	311
Table W.2 – Comparison of terms and definitions in IEC 61140:2001 and IEC 62368-1.....	313
Table W.3 – Comparison of terms and definitions in IEC 60950-1:2005 and IEC 62368-1.....	316
Table W.4 – Comparison of terms and definitions in IEC 60728-11 and IEC 62368-1.....	319

Table W.5 – Comparison of terms and definitions in IEC 62151 and IEC 62368-1 ..... 320  
Table W.6 – Comparison of terms and definitions in IEC 60065 and IEC 62368-1 ..... 321

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

**AUDIO/VIDEO, INFORMATION AND COMMUNICATION  
TECHNOLOGY EQUIPMENT –****Part 1: Safety requirements**

## FOREWORD

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International Standard IEC 62368-1 has been prepared by TC 108: Safety of electronic equipment within the field of audio/video, information technology and communication technology.

This second edition cancels and replaces the first edition published in 2010. It constitutes a technical revision.

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

- addition of requirements for LEDs;
- new requirements for wall and ceiling mounting means;
- addition of acoustic shock requirements for personal music players;
- revision of the battery requirements, including new requirements for coin / button cell batteries;
- revision of the burn requirements.

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

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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.

A list of all parts in the IEC 62368 series, published under the general title *Audio/video, information and communication technology equipment*, can be found on the IEC website.

The “in some countries” notes regarding differing national practices are contained in the following subclauses:

0.2.1, 1, 4.1.15, 4.7.3, 5.2.2.2, 5.4.2.3.2.4, 5.4.2.5, 5.4.5.1, 5.5.2.1, 5.5.6, 5.6.4.2, 5.7.5, 5.7.6.1, 10.5.3, 10.6.2.1, F.3.3.6, Table 13, Table 14 and Table 39.

In this standard, the following print types or formats are used:

- requirements proper and normative annexes: in roman type;
- compliance statements and test specifications: *in italic type*;
- notes/explanatory matter: in smaller roman type;
- normative conditions within tables: in smaller roman type;
- terms that are defined in 3.3: **bold**.

In figures and tables, if colour is available:

- green colour denotes a class 1 energy source;
- yellow colour denotes a class 2 energy source;
- red colour denotes a class 3 energy source.

The committee has decided that the contents of this publication will remain unchanged until the maintenance result 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 1 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 mandatory implementation nationally not earlier than five years from the date of publication of this standard.

NOTE 2 IEC 62368-1 is based on the principles of hazard based safety engineering, which is a different way of developing and specifying safety considerations than that of the current practice. While this standard is different from traditional IEC safety standards in its approach and while it is believed that IEC 62368-1 provides a number of advantages, its introduction and evolution is not intended to result in significant changes to the existing safety philosophy that led to the development of the safety requirements contained in IEC 60065 and IEC 60950-1. The predominant reason behind the creation of IEC 62368-1 is to simplify the problems created by the merging of the technologies of ITE and CE. The techniques used are novel so that a learning process is required and experience is needed in its application. Consequently, the committee recommends that this edition of the standard be considered as an alternative to IEC 60065 or IEC 60950-1 at least over the recommended transition period.

NOTE 3 Explanatory information related to IEC 62368-1 is contained in IEC/TR 62368-2. It provides rationale together with explanatory information related to this standard.

**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.**

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## INTRODUCTION

### 0 Principles of this product safety standard

#### 0.1 Objective

This part of IEC 62368 is a product safety standard that classifies energy sources, prescribes **safeguards** against those energy sources, and provides guidance on the application of, and requirements for, those **safeguards**.

The prescribed **safeguards** are intended to reduce the likelihood of pain, injury and, in the case of fire, property damage.

The objective of the INTRODUCTION is to help designers to understand the underlying principles of safety in order to design safe equipment. These principles are informative and not an alternative to the detailed requirements of this standard.

#### 0.2 Persons

##### 0.2.1 General

This standard describes **safeguards** for the protection of three kinds of persons: the **ordinary person**, the **instructed person**, and the **skilled person**. This standard assumes that a person will not intentionally create conditions or situations that could cause pain or injury.

NOTE In Australia, the work conducted by an **instructed person** or **skilled person** may require formal licensing from regulatory authorities.

##### 0.2.2 Ordinary person

**Ordinary person** is the term applied to all persons other than **instructed persons** and **skilled persons**. **Ordinary persons** include not only users of the equipment, but also all persons who may have access to the equipment or who may be in the vicinity of the equipment. Under **normal operating conditions** or **abnormal operating conditions**, **ordinary persons** should not be exposed to parts comprising energy sources capable of causing pain or injury. Under a **single fault condition**, **ordinary persons** should not be exposed to parts comprising energy sources capable of causing injury.

##### 0.2.3 Instructed person

**Instructed person** is a term applied to persons who have been instructed and trained by a **skilled person**, or who are supervised by a **skilled person**, to identify energy sources that may cause pain (see Table 1) and to take precautions to avoid unintentional contact with or exposure to those energy sources. Under **normal operating conditions**, **abnormal operating conditions** or **single fault conditions**, **instructed persons** should not be exposed to parts comprising energy sources capable of causing injury.

##### 0.2.4 Skilled person

**Skilled person** is a term applied to persons who have training or experience in the equipment technology, particularly in knowing the various energies and energy magnitudes used in the equipment. **Skilled persons** are expected to use their training and experience to recognize energy sources capable of causing pain or injury and to take action for protection from injury from those energies. **Skilled persons** should also be protected against unintentional contact or exposure to energy sources capable of causing injury.

#### 0.3 Model for pain and injury

An energy source that causes pain or injury does so through the transfer of some form of energy to or from a body part.