SLOVENSKI STANDARD
oSIST prEN IEC 62368-1:2019/prAA:2019

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Oprema za avdio/video, informacijsko in komunikacijsko tehnologijo - 1. del: Varnostne zahteve

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

Einrichtungen für Audio/Video-, Informations- und Kommunikationstechnik - Teil 1: Sicherheitsanforderungen

Equipements des technologies de l'audio/vidéo, de l'information et de la communication - Partie 1 : Exigences de sécurité.

Ta slovenski standard je istoveten z: **prEN IEC 62368-1:2019/prAA:2019**

ICS:

33.160.01	Avdio, video in avdiovizualni sistemi na splošno	Audio, video and audiovisual systems in general
35.020	Informacijska tehnika in tehnologija na splošno	Information technology (IT) in general

oSIST prEN IEC 62368-1:2019/prAA:2019 **en,fr,de**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

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English Version

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

Equipements des technologies de l'audio/vidéo, de l'information et de la communication - Partie 1 : Exigences de sécurité.

Einrichtungen für Audio/Video-, Informations- und Kommunikationstechnik - Teil 1: Sicherheitsanforderungen

This draft amendment prAA, if approved, will modify the European Standard prEN IEC 62368-1:2019; it is submitted to CENELEC members for enquiry.
Deadline for CENELEC: 2019-04-19.

It has been drawn up by CLC/TC 108X.

If this draft becomes an amendment, CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this amendment the status of a national standard without any alteration.

This draft amendment was established by CENELEC 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.

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

Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

Warning : This document is not a European Standard. It is distributed for review and comments. It is subject to change without notice and shall not be referred to as a European Standard.

CENELEC

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

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Project: 66779 Ref. No. prEN IEC 62368-1:2019/prAA:2019 E

European foreword

This draft amendment to the draft European Standard prEN IEC 62368-1:2019 was prepared by CLC/TC 108X "Safety of electronic equipment within the fields of Audio/Video, Information Technology and Communication Technology". It contains common modifications to 108/701/FDIS (IEC 62368-1:2018) and is submitted to the enquiry.

If approved, this draft amendment will be published as EN IEC 62368-1:201X/A11:201X.

The following dates are proposed:

– latest date by which the existence of this document has to be announced at national level	(doa)	dor + 6 months
– latest date by which this document has to be implemented at national level by publication of an identical national standard or by endorsement	(dop)	dor + 12 months
– latest date by which the national standards conflicting with this document have to be withdrawn	(dow)	dor + 36 months (to be confirmed or modified when voting)

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 Annexes ZZ, which are integral parts of this document.

13 **COMMON MODIFICATIONS**
14

15 ## 1 Modification to the European foreword

16 ***Add the*** *following new paragraphs after the sixth paragraph of European foreword:*
17
18 This standard covers the Principle Elements of the Safety Objectives for Electrical Equipment Designed
19 for Use within Certain Voltage Limits (LVD - 2014/35/EU).
20
21 This standard covers the health and safety objectives in Article 3.1 (a) of the Directive on the
22 harmonisation of the laws of the Member States relating to the making available on the market of radio
23 equipment and repealing Directive 1999/5/EC (RE-D – 2014/53/EU).
24

25 ## 2 Modification to the Scope

26 ***Replace*** *the 7th paragraph of the Scope with the following:*
27
28 This part of IEC 62368 specifies **safeguards** for **ordinary persons**, **instructed persons**, and **skilled**
29 **persons** under **normal operating conditions**, **abnormal operating conditions** (including **reasonably**
30 **foreseeable misuse**) and **single fault conditions**. Additional requirements may apply for equipment that
31 is clearly designed or intended for use by children or specifically attractive to children.

32 ## 3 Modification to Clause 3

33 ***Modify*** *Clause 3 as follows:*

34 **3 Terms, definitions and abbreviations**

35 **3.3 Terms and definitions**

36 ***Replace*** *3.3.19 of IEC 62368-1:2018 with the following definitions:*

37 **3.3.19**
38 **sound exposure**

39 **3.3.19.1**
40 **momentary exposure level**
41 ***MEL***
42 metric for estimating 1 s sound exposure level from the HD 483-1 S2 test signal applied to both
43 channels, based on EN 50332-1:2013, 4.2

44 Note 1 to entry: *MEL* is measured as A-weighted levels in dB.

45 Note 2 to entry: See B.3 of EN 50332-3:2017 for additional information.

46 **3.3.19.2**
47 **calculated sound dose**
48 ***CSD***
49 one week rolling estimate of sound exposure expressed in percent of the maximum regarded as
50 safe

51 Note 1 to entry: See B.4 of EN 50332-3:2017 for additional information.

3.3.19.3
sound exposure
E
A-weighted sound pressure (*p*) squared and integrated over a stated period of time, *T*

Note 1 to entry: The SI unit is Pa² s.

$$E = \int_0^T p(t)^2 \, dt$$

3.3.19.4
sound exposure level
SEL
logarithmic measure of sound exposure relative to a reference value, E_0, typically the 1 kHz threshold of hearing in humans

Note 1 to entry: *SEL* is measured as A-weighted levels in dB.

$$SEL = 10 \lg\left(\frac{E}{E_0}\right) \text{ dB}$$

Note 2 to entry: See B.4 of EN 50332-3 for additional information.

3.3.19.5
digital signal level relative to full scale
dBFS
levels reported in dBFS are always r.m.s. Full scale level, 0 dBFS, is the level of a dc-free 997-Hz sine wave whose undithered positive peak value is positive digital full scale, leaving the code corresponding to negative digital full scale unused

Note 1 to entry: It is invalid to use dBFS for non-r.m.s. levels. Because the definition of full scale is based on a sine wave, the level of signals with a crest factor lower than that of a sine wave may exceed 0 dBFS. In particular, square-wave signals may reach +3,01 dBFS.

4 Modification to Clause 10, Radiation

***Replace** Clause 10.6 of IEC 62368-1:2018 with the following:*

10.6 Safeguards against acoustic energy sources

10.6.1 General

Safeguard requirements for protection against long-term exposure to excessive sound pressure levels from personal music players closely coupled to the ear are specified below. Requirements for earphones and headphones intended for use with personal music players are also covered.

A personal music player is a portable equipment intended for use by an **ordinary person**, that:

– is designed to allow the user to listen to audio or audiovisual content / material; and

– uses a listening device, such as headphones or earphones that can be worn in or on or around the ears; and

– has a player that can be body worn (of a size suitable to be carried in a clothing pocket) and is intended for the user to walk around with while in continuous use (for example, on a street, in a subway, at an airport, etc.).

EXAMPLES Portable CD players, MP3 audio players, mobile phones with MP3 type features, PDAs or similar equipment.

Personal music players shall comply with the requirements of either 10.6.2 or 10.6.3.

NOTE 1 Protection against acoustic energy sources from telecom applications is referenced to ITU-T P.360.

NOTE 2 It is the intention of the Committee to allow the alternative methods for now, but to only use the dose measurement method as given in 10.6.5 in future. Therefore, manufacturers are encouraged to implement 10.6.5 as soon as possible.

Listening devices sold separately shall comply with the requirements of 10.6.6.

These requirements are valid for music or video mode only.

The requirements do not apply to:

– professional equipment;

NOTE 3 Professional equipment is equipment sold through special sales channels. All products sold through normal electronics stores are considered not to be professional equipment.

– hearing aid equipment and other devices for assistive listening;

– the following type of analogue personal music players:

  - long distance radio receiver (for example, a multiband radio receiver or world band radio receiver, an AM radio receiver), and
  - cassette player/recorder;

NOTE 4 This exemption has been allowed because this technology is falling out of use and it is expected that within a few years it will no longer exist. This exemption will not be extended to other technologies.

– a player while connected to an external amplifier that does not allow the user to walk around while in use.

For equipment that is clearly designed or intended primarily for use by children, the limits of the relevant toy standards may apply.

NOTE 5 In Europe, the relevant requirements are given in EN 71-1:2011, 4.20 and the related tests methods and measurement distances apply.

10.6.2 Classification of devices without the capacity to estimate sound dose

10.6.2.1 General

This standard is transitioning from short-term based (30 s) requirements to long-term based (40 hour) requirements. These clauses remain in effect only for devices that do not comply with sound dose estimation as stipulated in EN 50332-3.

For classifying the acoustic output $L_{Aeq,T}$, measurements are based on the A-weighted equivalent sound pressure level over a 30 s period.

For music where the average sound pressure (long term $L_{Aeq,T}$) measured over the duration of the song is lower than the average produced by the programme simulation noise, measurements may be done over the duration of the complete song. In this case, T becomes the duration of the song.

NOTE Classical music, acoustic music and broadcast typically has an average sound pressure (long term $L_{Aeq,T}$) which is much lower than the average programme simulation noise. Therefore, if the player is capable to analyse the content and compare it with the programme simulation noise, the warning does not need to be given as long as the average sound pressure of the song does not exceed the required limit.

For example, if the player is set with the programme simulation noise to 85 dB, but the average music level of the song is only 65 dB, there is no need to give a warning or ask an acknowledgement as long as the average sound level of the song is not above the basic limit of 85 dB.

10.6.2.2 RS1 limits (to be superseded, see 10.6.3.2)

RS1 is a class 1 acoustic energy source that does not exceed the following:

– For equipment provided as a package (player with its listening device), and with a proprietary connector between the player and its listening device, or where the combination of player and listening device is known by other means such as setting or automatic detection, the $L_{\mathrm{Aeq},T}$ acoustic output shall be ≤ 85 dB when playing the fixed “programme simulation noise” described in EN 50332-1.

– For equipment provided with a standardized connector (for example, a 3,5 phone jack) that allows connection to a listening device for general use, the unweighted r.m.s. output voltage shall be ≤ 27 mV (analogue interface) or -25 dBFS (digital interface) when playing the fixed “programme simulation noise” described in EN 50332-1.

– The RS1 limits will be updated for all devices as per 10.6.3.2.

10.6.2.3 RS2 limits (to be superseded, see 10.6.3.3)

RS2 is a class 2 acoustic energy source that does not exceed the following:

– for equipment provided as a package (player with its listening device), and with a proprietary connector between the player and its listening device, or when the combination of player and listening device is known by other means such as setting or automatic detection, the $L_{\mathrm{Aeq},T}$ acoustic output shall be ≤ 100 dB(A) when playing the fixed “programme simulation noise” as described in EN 50332-1.

– for equipment provided with a standardized connector (for example, a 3,5 phone jack) that allows connection to a listening device for general use, the unweighted r.m.s. output voltage shall be ≤ 150 mV (analogue interface) or -10 dBFS (digital interface) when playing the fixed “programme simulation noise” as described in EN 50332-1.

10.6.2.4 RS3 limits

RS3 is a class 3 acoustic energy source that exceeds RS2 limits.

10.6.3 Classification of devices (new)

10.6.3.1 General

Previous limits (10.6.2) created abundant false negative and false positive PMP sound level warnings. New limits, compliant with The Commission Decision of 23 June 2009, are given below.

10.6.3.2 RS1 limits (new)

RS1 is a class 1 acoustic energy source that does not exceed the following:

– for equipment provided as a package (player with its listening device), and with a proprietary connector between the player and its listening device, or where the combination of player and listening device is known by other means such as setting or automatic detection, the $L_{\mathrm{Aeq},T}$ acoustic output shall be ≤ 80 dB when playing the fixed “programme simulation noise” described in EN 50332-1.

– for equipment provided with a standardized connector (for example, a 3,5 phone jack) that allows connection to a listening device for general use, the unweighted r.m.s. output voltage shall be ≤ 15 mV (analogue interface) or -30 dBFS (digital interface) when playing the fixed “programme simulation noise” described in EN 50332-1.

10.6.3.3 RS2 limits (new)

RS2 is a class 2 acoustic energy source that does not exceed the following:

– for equipment provided as a package (player with its listening device), and with a proprietary connector between the player and its listening device, or where the combination of player and listening device is known by other means such as setting or automatic detection, the weekly sound exposure level, as described in EN50332-3, shall be ≤ 80 dB when playing the fixed "programme simulation noise" described in EN 50332-1.

– for equipment provided with a standardized connector (for example, a 3,5 phone jack) that allows connection to a listening device for general use, the unweighted r.m.s. output level, integrated over one week, as described in EN50332-3, shall be ≤ 15 mV (analogue interface) or -30 dBFS (digital interface) when playing the fixed “programme simulation noise” described in EN 50332-1.

10.6.4 Requirements for maximum sound exposure

10.6.4.1 Measurement methods

All volume controls shall be turned to maximum during tests.

Measurements shall be made in accordance with EN 50332-1 or EN 50332-2 as applicable.

10.6.4.2 Protection of persons

Except as given below, protection requirements for parts **accessible** to **ordinary persons**, **instructed persons** and **skilled persons** are given in 4.3.

NOTE 1 Volume control is not considered a **safeguard.**

Between RS2 and an **ordinary person**, the **basic safeguard** may be replaced by an **instructional safeguard** in accordance with Clause F.5, except that the **instructional safeguard** shall be placed on the equipment, or on the packaging, or in the instruction manual. Alternatively, the **instructional safeguard** may be given through the equipment display during use.

The elements of the **instructional safeguard** shall be as follows:

– element 1a: the symbol  , IEC 60417-6044 (2011-01)

– element 2: “High sound pressure” or equivalent wording

– element 3: “Hearing damage risk” or equivalent wording

– element 4: “Do not listen at high volume levels for long periods.” or equivalent wording

An **equipment safeguard** shall prevent exposure of an **ordinary person** to an RS2 source without intentional physical action from the **ordinary person** and shall automatically return to an output level not exceeding what is specified for an RS1 source when the power is switched off.

The equipment shall provide a means to actively inform the user of the increased sound level when the equipment is operated with an output exceeding RS1. Any means used shall be acknowledged by the user before activating a mode of operation which allows for an output exceeding RS1. The acknowledgement does not need to be repeated more than once every 20 h of cumulative listening time.

NOTE 2 Examples of means include visual or audible signals. Action from the user is always needed.

NOTE 3 The 20 h listening time is the accumulative listening time, independent of how often and how long the personal music player has been switched off.

A **skilled person** shall not be unintentionally exposed to RS3.