



# SLOVENSKI STANDARD

## SIST EN 352-10:2021

01-maj-2021

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**Varovala sluha - Varnostne zahteve - 10. del: Ušesni čepi z avdio vhodom za namen razvedrila**

Hearing protectors - Safety requirements - Part 10: Entertainment audio earplugs

Gehörschützer - Sicherheitstechnische Anforderungen und Prüfungen - Teil 10: Gehörschutzstöpsel mit Audiounterhaltungseingang

**iTeh STANDARD PREVIEW**

Protecteurs individuels contre le bruit — Exigences de sécurité et essais — Partie 10 : Bouchons d'oreille avec entrée audio pour le divertissement

[SIST EN 352-10:2021](#)

**Ta slovenski standard je istoveten z: EN 352-10:2020**

<http://standards.itih.si/catalog/standard?id=352-10:2020&id=ca8933620208/sist-en-352-10-2021>

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**ICS:**

13.340.20 Varovalna oprema za glavo Head protective equipment

**SIST EN 352-10:2021**

**en,fr,de**

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EUROPEAN STANDARD

EN 352-10

NORME EUROPÉENNE

EUROPÄISCHE NORM

November 2020

ICS 13.340.20

English Version

## Hearing protectors - Safety requirements - Part 10: Entertainment audio earplugs

Protecteurs individuels contre le bruit - Exigences de sécurité et essais - Partie 10 : Bouchons d'oreille avec entrée audio pour le divertissement

Gehörschützer - Sicherheitstechnische Anforderungen und Prüfungen - Teil 10: Gehörschutzstöpsel mit Audiounterhaltungseingang

This European Standard was approved by CEN on 18 June 2018.

CEN 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 CEN 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 CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

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EUROPEAN COMMITTEE FOR STANDARDIZATION  
COMITÉ EUROPÉEN DE NORMALISATION  
EUROPÄISCHES KOMITEE FÜR NORMUNG

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

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## European foreword

This document (EN 352-10:2020) has been prepared by Technical Committee CEN/TC 159 “Hearing protectors”, the secretariat of which is held by DIN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by May 2021, and conflicting national standards shall be withdrawn at the latest by November 2023.

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

This document has been prepared under a standardization request given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Regulation(s).

For relationship with EU Regulation(s), see informative Annex ZA, which is an integral part of this document.

According to the CEN-CENELEC Internal Regulations, the national standards organisations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

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**EN 352-10:2020 (E)****Introduction**

The requirements of this standard are concerned with the entertainment audio performance of the earplugs.

EN 352-10 is part of a family of standards describing product requirements:

- EN 352-1, *Hearing protectors — General requirements — Part 1: Earmuffs*
- EN 352-2, *Hearing protectors — General requirements — Part 2: Earplugs*
- EN 352-3, *Hearing protectors — General requirements — Part 3: Earmuffs attached to head protection and/or face protection devices*
- EN 352-4, *Hearing protectors — Safety requirements — Part 4: Level-dependent earmuffs*
- EN 352-5, *Hearing protectors — Safety requirements — Part 5: Active noise reduction earmuffs*
- EN 352-6, *Hearing protectors — Safety requirements — Part 6: Earmuffs with safety-related audio input*
- EN 352-7, *Hearing protectors — Safety requirements — Part 7: Level-dependent earplugs*
- EN 352-8, *Hearing protectors — Safety requirements — Part 8: Entertainment audio earmuffs*
- EN 352-9, *Hearing protectors — Safety requirements — Part 9: Earplugs with safety-related audio input*
- EN 352-10, *Hearing protectors — Safety requirements — Part 10: Entertainment audio earplugs*

Test methods for these requirements are described in the following standards:

- EN 13819-1, *Hearing protectors — Testing — Part 1: Physical test methods*
- EN 13819-2, *Hearing protectors — Testing — Part 2: Acoustic test methods*
- EN 13819-3, *Hearing protectors — Testing — Part 3: Supplementary acoustic test methods*

An associated standard EN 458 covers selection, use, care and maintenance of hearing protection.

## 1 Scope

This document is applicable to entertainment audio earplugs. It specifies requirements on construction, design, performance, marking and user information relating to the inclusion of the entertainment audio facility.

Entertainment audio earplugs use a wired or wireless system through which audio entertainment can be relayed. They may incorporate a radio receiver set or music player for entertainment or allow audio input from external devices.

They also offer the possibility to communicate warning signals or messages. The product standards impose a limitation on the reproduced sound pressure level at the ear.

The entertainment audio signal can be transmitted by radio (broadcast or local plant programmes) or by wire or other communication like Bluetooth.

## 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 352-2:2020, *Hearing protectors — General requirements — Part 2: Earplugs*

EN 13819-3:2019, *Hearing protectors — Testing — Part 3: Supplementary acoustic test methods*

## 3 Terms and definitions (standards.iteh.ai)

For the purposes of this document, the terms and definitions given in EN 352-2:2020 and the following apply.

<https://standards.iteh.ai/catalog/standards/sist/f3eb4dba-420f-49fe-a936->

[ca8933630208/sist-en-352-10-2021](https://standards.iteh.ai/catalog/standards/sist/en-352-10-2021)

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <http://www.iso.org/obp>

### 3.1

#### entertainment audio earplugs

earplugs additionally providing reproduced sound for entertainment purposes

Note 1 to entry: They may be designed with an electrical audio input, with built-in broadcast receivers or with other built-in wireless receivers such as Bluetooth, or they may be part of a complete system composed of transmitters and receiving audio earplugs.

### 3.2

#### sound output level

A-weighted diffuse-field related sound pressure level produced by the entertainment audio facility of an earplug for a given input signal

## 4 Requirements

### 4.1 General

Entertainment audio earplugs shall meet the requirements of EN 352-2:2020 and the requirements listed in 4.2.

**EN 352-10:2020 (E)****4.2 Performance****4.2.1 Maximum sound pressure levels generated by entertainment audio****4.2.1.1 General**

The equivalent sound output levels of the test samples shall be tested in accordance with the appropriate procedure from EN 13819-3:2019 (7.4.3, 7.5.2 or 7.6.2) and reported in the test report. The mean value of eight measurements plus one standard deviation shall not exceed 82 dB(A). In cases where a manufacturer has designed left and right earplugs in a different way (especially in terms of sound pressure level effective to the ear), neither the mean value of four measurements of left earplugs plus one standard deviation nor the mean value of four measurements of right earplugs plus one standard deviation shall exceed 82 dB(A).

**4.2.1.2 Earplugs with built-in broadcast receivers for FM radio**

The procedure from EN 13819-3:2019, 7.4.3 shall be used. The sound output levels are determined for the FM radio signal defined in EN 13819-3:2019, 7.4.3.1 with one specific signal level.

**4.2.1.3 Entertainment audio earplugs with electrical audio input**

The procedure from EN 13819-3:2019, 7.6.2.2.2 shall be used. The sound output levels shall be measured up to 150 mV or up to the maximum input voltage as specified by the manufacturer (whichever is larger).

NOTE 1 This requirement corresponds to the maximum output voltage of a personal music player of 150 mV according to EN 62368-1:2014+AC:2015, 10.6.2.2 if the test signal from EN 50332-1:2013 is applied.

NOTE 2 EN 50332-1:2013 and EN 50332-2:2013 contain the test procedures for the maximum sound pressure levels of personal music players.

**4.2.1.4 Entertainment audio earplugs with built-in Bluetooth receivers**

The procedure from EN 13819-3:2019, 7.5.2 shall be used. The sound output levels are determined for the Bluetooth signal defined in EN 13819-3:2019, 7.5.2.2.2.

**4.2.1.5 Complete systems composed of transmitters and entertainment audio earplugs**

EN 13819-3:2019, 5.2 or 5.3 and 6.5 shall be used. The transmitting, receiving and amplifying devices shall be adjusted to maximum setting.

**5 Marking**

The marking specified in EN 352-2:2020 shall be used. No additional marking is needed.

**6 Manufacturer's instructions and information**

The information specified in EN 352-2:2020 and the following additional information shall be supplied with the earplugs:

- a) a reference to this document EN 352-10:2020;
- b) an indication that the earplugs provide an entertainment audio facility;
- c) for products without electrical audio input, a statement that the earplugs provide audio signal sound pressure level limitation and that the earplugs limit the entertainment audio signal to 82 dB(A) effective to the ear;



- d) for products with electrical audio input, a statement up to which value of input voltage (150 mV or a voltage specified by the manufacturer, whichever is larger) the entertainment audio signal doesn't exceed 82 dB(A) effective to the ear;
- e) a warning that the product shall not be used if it can't be ensured that the input voltage doesn't exceed the maximum value stated in d);
- f) a method of checking, charging and changing batteries, if applicable;
- g) a statement that the audibility of warning signals at a specific workplace may be impaired while using the entertainment facility.

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## Annex ZA (informative)

### Relationship between this European Standard and the essential requirements of Regulation (EU) 2016/425 of the European Parliament and of the Council of 9 March 2016 on personal protective equipment aimed to be covered

This European Standard has been prepared under a Commission's standardization request to provide one voluntary means of conforming to essential requirements of Regulation (EU) 2016/425 of the European Parliament and of the Council of 9 March 2016 on personal protective equipment.

Once this standard is cited in the Official Journal of the European Union under that Regulation (EU) 2016/425, compliance with the normative clauses of this standard given in Table ZA.1 confers, within the limits of the scope of this standard, a presumption of conformity with the corresponding essential requirements of that Regulation (EU) 2016/425 and associated EFTA regulations.

**Table ZA.1 — Correspondence between this European Standard and Regulation (EU) 2016/425**

Essential Requirements of Regulation (EU) 2016/425	Clause(s)/subclause(s) of this EN	Remarks/Notes
1.2.1 Absence of inherent risks and other nuisance factors	4.2.1.1	
1.4 Manufacturer's instructions and information	6	

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WARNING 1 — Presumption of conformity stays valid only as long as a reference to this European Standard is maintained in the list published in the Official Journal of the European Union. Users of this standard should consult frequently the latest list published in the Official Journal of the European Union.

WARNING 2 — Other Union legislation may be applicable to the product(s) falling within the scope of this standard.