



SLOVENSKI STANDARD
oSIST prEN 352-10:2017
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Varovala sluha - Varnostne zahteve in preskušanje - 10. del: Ušesni čepi z razvedrilnim zvočnim signalom

Hearing protectors - Safety requirements and testing - Part 10: Earplugs with entertainment audio input

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

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

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ICS:

13.340.20 Varovalna oprema za glavo Head protective equipment

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EUROPEAN STANDARD
NORME EUROPÉENNE
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English Version

Hearing protectors - Safety requirements and testing - Part 10: Earplugs with entertainment audio input

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

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

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 159.

If this draft becomes a European Standard, 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.

This draft European Standard was established by CEN 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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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.

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

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European foreword

This document (prEN 352-10:2017) has been prepared by Technical Committee CEN/TC 159 “Hearing protectors”, the secretariat of which is held by DIN.

This document is currently submitted to the CEN Enquiry.

This document has been prepared under a mandate 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.

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prEN 352-10:2017 (E)**Introduction**

Earplugs with entertainment audio input 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 requirements of this standard are concerned primarily with earplugs with entertainment audio input.

prEN 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 and testing — Part 4: Level-dependent earmuffs*
- EN 352-5, *Hearing protectors — Safety requirements and testing — Part 5: Active noise reduction earmuffs*
- EN 352-6, *Hearing protectors — Safety requirements and testing — Part 6: Earmuffs with safety-related audio input*
- EN 352-7, *Hearing protectors — Safety requirements and testing — Part 7: Level-dependent earplugs*
- EN 352-8, *Hearing protectors — Safety requirements and testing — Part 8: Entertainment audio earmuffs*
- prEN 352-9, *Hearing protectors — Safety requirements and testing — Part 9: Earplugs with safety-related audio input*
- prEN 352-10, *Hearing protectors — Safety requirements and testing — Part 10: Earplugs with entertainment audio input*

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*
- prEN 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 European Standard 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.

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, *Hearing protectors — General requirements — Part 2: Ear-plugs*

prEN 13819-3:2016, *Hearing protectors — Testing — Part 3: Supplementary acoustic test methods*

3 Terms and definitions

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

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 like 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 and the requirements listed in 4.2.

4.2 Performance

4.2.1 Maximum sound pressure levels generated by entertainment audio

4.2.1.1 General

The sound output levels of the test samples shall be tested in accordance with the appropriate procedure from prEN 13819-3:2016 (7.3, 7.4 or 7.5) 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 plugs in a different way (especially in terms of sound pressure level effective to the ear), neither the mean value of four measurements of left plugs plus one standard deviation nor the mean value of four measurements of right plugs plus one standard deviation shall exceed 82 dB(A).

prEN 352-10:2017 (E)**4.2.1.2 Earplugs with built-in broadcast receivers for FM radio**

The procedure from prEN 13819-3:2016, 7.3.2 shall be used. The sound output levels are determined for the FM radio signal defined in prEN 13819-3:2016, 7.3.2.1 with one specific signal level.

4.2.1.3 Entertainment audio earplugs with an electrical audio input

The procedure from prEN 13819-3:2016, 7.5.2.1, Part 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 60065 if the test signal from EN 50332-1 is applied.

NOTE 2 EN 50332-1 and EN 50332-2 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 prEN 13819-3:2016, 7.4.2.1, Part 2 shall be used. The sound output levels are determined for the Bluetooth signal defined in prEN 13819-3:2016, 7.4.2.1.

4.2.1.5 Complete systems composed of transmitters and entertainment audio earplugs

The transmitting, receiving and amplifying devices shall be adjusted to maximum setting.

5 Marking

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There are no requirements for marking in addition to what is given in EN 352-2.

6 Information supplied by the manufacturer

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Information according with 6.1 shall be provided at least in the official language(s) of the European state of destination.

6.1 User information

The following information for the user (in addition to that required by EN 352-2) shall be supplied with the earplugs:

- a) number of this standard, EN 352-10;
- b) an indication that the earplugs provides 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 product limits the entertainment audio signal to 82 dB(A) effective to the ear;
- e) a warning that the product shall not to be used if it can't be ensured that the input voltage doesn't exceed the maximum value stated above;
- 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.

6.2 Additional information

The following information shall be available from the manufacturer on request:

- a) results of tests performed in accordance with this standard;
- b) the name and country of the test laboratory which performed the tests specified and the date of the tests.

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