



SLOVENSKI STANDARD

SIST EN 352-9:2021

01-april-2021

Varovala sluha - Varnostne zahteve - 9. del: Ušesni čepi z varnostnim avdio vhodom

Hearing protectors - Safety requirements - Part 9: Earplugs with safety-related audio input

Gehörschützer - Sicherheitstechnische Anforderungen und Prüfungen - Teil 9: Gehörschutzstöpsel mit elektrischem Audioeingang

Protecteurs individuels contre le bruit - Exigences de sécurité et essais - Partie 9: Bouchons d'oreilles avec entrée audio-électrique

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ICS:

13.340.20 Varovalna oprema za glavo Head protective equipment

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 352-9

November 2020

ICS 13.340.20

English Version

**Hearing protectors - Safety requirements - Part 9:
Earplugs with safety-related audio input**

Protecteurs individuels contre le bruit - Exigences de
sécurité et essais - Partie 9: Bouchons d'oreilles avec
entrée audio-électrique

Gehörschützer - Sicherheitstechnische Anforderungen
und Prüfungen - Teil 9: Gehörschutzstöpsel mit
elektrischem Audioeingang

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.

CEN members are the national standards bodies of 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 United Kingdom.



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

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European foreword

This document (EN 352-9:2020) 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, Republic of Macedonia, 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 352-9:2020 (E)

Introduction

The requirements of this standard are concerned with the safety-related audio input performance of the earplugs. Sound output levels and criterion input signals are reported in the user information.

EN 352-9 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 earplugs supplemented by a safety-related audio input. The audio signal can be transmitted by electrical input or other communication like Bluetooth¹. It specifies requirements on construction, design, performance, marking and user information related to the inclusion of the safety-related audio input.

Earplugs with safety-related audio input are designed to provide speech information and warning signals, while providing attenuation of external sound. They may be selected for use in a number of different environments, for example in air traffic communication, in the police forces, in the broadcasting and entertainment industries.

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

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

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

earplugs with safety-related audio input

earplugs including an electrical audio input facility or circuit for safety-related communication

3.2

sound output level

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

3.3

criterion input signal

mean input signal minus one standard deviation for which the sound output level is equal to 82 dB(A)

¹ (Bluetooth® is the trademark of a product supplied by Bluetooth® SIG. This information is given for the convenience of users of this European Standard and does not constitute an endorsement by CEN of the product named. Equivalent products may be used if they can be shown to lead to the same results.)

EN 352-9:2020 (E)

4 Requirements

4.1 General

Earplugs with safety-related audio input shall meet the requirements of EN 352-2:2020 and the requirements listed in 4.2.

4.2 Sound output levels and criterion input signal

The sound output level of the earplugs with electrical audio input shall be measured in accordance with EN 13819-3:2019, 7.6.2.2.1. For earplugs with Bluetooth audio input, the sound output level shall be measured according to EN 13819-3:2019, 7.5.2.2.1.

The criterion input signal for earplugs with electrical audio input shall be calculated according to EN 13819-3:2019, 7.6.2.2.1 and for earplugs with Bluetooth audio input according to EN 13819-3:2019, 7.5.2.2.1.

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 352-9:2020;
- b) an indication that the hearing protector provides safety-related audio input;
- c) the criterion input signal;
- d) the relationship between sound output level and input signal in 5 dB steps from a sound output level of 70 dB(A) up to the maximum input signal;
- e) the sound output level for maximum input signal;
- f) the usage time for the maximum input signal that corresponds to an equivalent sound output level of 82 dB(A) over 8 h;
- g) a method for checking, charging and changing batteries, if applicable;
- h) statements that include the following information:
 - 1) The earplug is provided with safety-related audio input. The user should check correct operation before use. If distortion or failure is detected, the user should refer to the manufacturer's advice for maintenance;
 - 2) A warning that the output of the audio circuit of this hearing protector may exceed the exposure limit level;
 - 3) A warning that this product may not be used for entertainment since the output level is not limited to the necessary innocuousness level.

NOTE Further guidance on how to use the information in c) and d) can be found in EN 458:2016, 6.2.3.5 and Annex E.

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
1.1.1 Ergonomics	4.1	by reference to EN 352-2:2020
1.2.1.3 Maximum permissible user impediment	4.2	
1.4 Manufacturer's instructions and information	6	
3.5 Protection against the harmful effects of noise	4	This standard should be used in conjunction with EN 352-2:2020, which covers other Essential Requirements of Regulation (EU) 2016/425 that are also applicable to the products specified in the scope of this standard.

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.

Bibliography

- [1] EN 458:2016, *Hearing protectors — Recommendations for selection, use, care and maintenance — Guidance document*
- [2] EN 13819-1, *Hearing protectors — Testing — Part 1: Physical test methods*
- [3] EN 13819-2, *Hearing protectors — Testing — Part 2: Acoustic test methods*

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