



SLOVENSKI STANDARD
oSIST prEN 352-5:2017
01-september-2017

Varovala sluha - Varnostne zahteve in preskušanje - 5. del: Naušniki za zmanjšanje delovnega hrupa

Hearing protectors - Safety requirements and testing - Part 5: Active noise reduction ear-muffs

Gehörschützer - Sicherheitstechnische Anforderungen und Prüfungen - Teil 5:
Kapselgehörschützer mit aktiver Geräuschkompensation

Protecteurs individuels contre le bruit - Exigences de sécurité et essais - Partie 5 : Serre-tête à atténuation active du bruit

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Ta slovenski standard je istoveten z: prEN 352-5

ICS:

13.340.20 Varovalna oprema za glavo Head protective equipment

oSIST prEN 352-5:2017

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

DRAFT
prEN 352-5

June 2017

ICS 13.340.20

Will supersede EN 352-5:2002

English Version

Hearing protectors - Safety requirements and testing - Part 5: Active noise reduction ear-muffs

Protecteurs individuels contre le bruit - Exigences de
sécurité et essais - Partie 5 : Serre-tête à atténuation
active du bruit

Gehörschützer - Sicherheitstechnische Anforderungen
und Prüfungen - Teil 5: Kapselgehörschützer mit
aktiver Geräuschkompensation

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.

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.



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

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

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STANDARD PREVIEW

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European foreword

This document (prEN 352-5:2017) 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 will supersede EN 352-5:2002 and EN 352-5:2002/A1:2005.

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.

In comparison with the previous edition, the following technical modifications have been made:

Clause/Paragraph/Table/Figure	Change
3 Terms and definitions	A definition for active noise reduction earmuff, ANR earmuff added.
4.2.2 Maximum sound pressure level for linear operation	A limit of 110 dB for external sound pressure level added.
4.2.2 and 4.2.3	New requirements on criterion levels added
5 Testing	removed, reference to prEN 13819-3:2016, 7.2 added
5.1.1 to 5.1.3 Testing, Annex B	removed, reference to prEN 13819-3 x.x added
Annex A	removed
Annex B	removed, reference to prEN 13819-3:2016, 7.2 added
Annex ZA	reference to EN ISO 11904-1 removed reference to EN 13819-1 added
NOTE	The technical changes referred to include the significant technical changes from the EN revised but is not an exhaustive list of all modifications from the previous edition.

prEN 352-5:2017 (E)**Introduction**

Active noise reduction earmuffs are designed to provide additional attenuation of external sounds by means of a noise cancellation circuit. This additional attenuation is usually provided at low and mid frequencies. They may be selected for use in low frequency dominated high noise environments.

The requirements of the standard are concerned primarily with the active noise reduction performance of the earmuffs.

EN 352-5 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 active noise reduction (ANR) earmuffs. It specifies requirements on construction, design, performance, marking and user information related to the inclusion of the active noise reduction 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 352-1, *Hearing protectors — General requirements — Part 1: Ear-Muffs*

EN 352-3, *Hearing protectors — General requirements — Part 3: Ear-muffs attached to an industrial safety helmet*

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

3 Terms and definitions

For the purposes of this European Standard the terms and definitions given in EN 352-1, EN 352-3 and the following apply.

3.1

active noise reduction earmuff (standards.iteh.ai)

ANR earmuff

earmuff that provides additional attenuation of external sounds by means of a noise cancellation circuit

3.2

active mode

operation of the ANR earmuff with the ANR circuit switched on

3.3

passive mode

operation of the ANR earmuff with the ANR circuit switched off

4 Requirements

4.1 General

Active noise reduction earmuffs shall meet the requirements of EN 352-1 (or EN 352-3, as appropriate) and the requirements listed in 4.2.

4.2 Performance

4.2.1 Active attenuation

The total attenuation shall be measured as specified in prEN 13819-3:2016, 7.2 and reported in the user information.

4.2.2 Maximum sound pressure level for correct ANR operation

The maximum sound pressure level for correct operation of the ANR circuit shall be determined as specified in prEN 13819-3:2016, 7.2 and reported in the user information.

prEN 352-5:2017 (E)**4.2.3 Oscillation and acoustic malfunction**

When tested as specified in prEN 13819-3:2016, 7.2 none of the subjects shall have perceived sustained oscillation or acoustic malfunction (whistling or instability) when the earmuff has been fitted in accordance with the manufacturer's instructions.

5 Marking

There are no requirements for marking in addition to what is given in EN 352-1 or EN 352-3.

6 Information supplied by the manufacturer**6.1 User information**

The following information for the user (in addition to that required by EN 352-1 or EN 352-3) shall be supplied with the earmuffs:

- a) the number of this standard, EN 352-5;
- b) an indication that the hearing protector provides an active noise reduction facility;
- c) the mean, standard deviation and calculated APV for each test frequency for the total attenuation together with the derived HML and SNR values as specified in prEN 13819-3:2016, 7.2.1.3;
- d) the highest level of the external test noise for which the ANR circuit is operating correctly;
- e) a method for checking, charging and changing batteries;
- f) statements that include the following information:
 - 1) The earmuff is provided with active noise reduction. 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 and replacement of the battery.
 - 2) A warning that the protective performance may deteriorate with battery usage and the typical period of continuous use that can be expected from the earmuff battery.
 - 3) A warning that the performance of the active noise reduction earmuffs may be adversely affected when sustained oscillation (whistling or instability) is perceived. If refitting the earmuffs or replacement of the batteries does not overcome this malfunction, the user should contact the supplier or manufacturer.

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.

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	
1.1.2.1 Optimum level of protection	4.1	
1.4 Manufacturer's instructions and information	6.1	
3.5 Protection against the harmful effects of noise	4.1	

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.