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BSI Standards Publication

Hearing protectors — General requirements

Part 3: Earmuffs attached to head protection and/or face protection devices

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National foreword

This British Standard is the UK implementation of EN 352-3:2020. It supersedes BS EN 352-3:2002, which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee PH/7, Hearing protectors.

A list of organizations represented on this committee can be obtained on request to its committee manager.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

This publication has been prepared under a mandate given to the European Standards Organizations by the European Commission and the European Free Trade Association and is intended to support essential requirements of the EU legislation detailed in the European foreword. Annex ZA/ZZ describes how the publication relates to the legislation.

For the Great Britain market (England, Scotland and Wales), if the UK Government has designated this publication for conformity with UKCA marking legislation and has not amended the essential requirements of that legislation, Annex ZA/ZZ and any references to EU law in the publication should be read in accordance with the designation as applying to UK legislation in the same way as to EU law. Further information on designated standards can be found at www.bsigroup.com/standardsandregulation.

For the Northern Ireland market, UK law will continue to implement relevant EU law subject to periodic confirmation. References to EU legislation are therefore still valid.

More information on legislation can be found at www.gov.uk.

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Published by BSI Standards Limited 2021

ICS 13.340.20

Compliance with a British Standard cannot confer immunity from legal obligations.

This British Standard was published under the authority of the Standards Policy and Strategy Committee on 30 November 2020.

Amendments/corrigenda issued since publication

Date	Text affected
31 March 2021	Implementation of CEN correction notice 3 February 2021: correction to reference date in Subclause 4.3.4

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EUROPÄISCHE NORM

November 2020

ICS 13.340.20

Supersedes EN 352-3:2002

English Version

Hearing protectors - General requirements - Part 3: Earmuffs attached to head protection and/or face protection devices

Protecteurs individuels contre le bruit - Exigences
générales - Partie 3 : Serre-tête montés sur dispositifs
de protection de la tête et/ou du visage

Gehörschützer - Allgemeine Anforderungen - Teil 3: An
Kopfschutz und/oder Gesichtsschutzgeräten befestigte
Kapselgehörschützer

This European Standard was approved by CEN on 24 February 2020.

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 foreword

This document (EN 352-3:2020) 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 supersedes EN 352-3:2002.

The technical changes between this document and the previous edition of this European Standard are listed in Annex A.

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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Introduction

This document sets requirements for personal hearing protection devices in relation to Regulation (EU) 2016/425 on personal protective equipment.

The particular requirement in relation to the ability of hearing protectors to reduce noise below limit levels is addressed in the standard by requiring the sound attenuation of the hearing protectors, measured in accordance with EN ISO 4869-1, to be not less than a specified minimum. Further, by requiring that the measured sound attenuation be declared, the selection of suitable hearing protectors for individual circumstances can be undertaken according to established practice.

EN 352-3 is part of a family of standards describing product requirements for hearing protectors:

- 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 for all types of hearing protectors 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.

The parts of EN 352, other than parts 1, 2 and 3, cover the performance of functions additional to passive hearing protection. Hearing protectors which incorporate one or more of these functions are subject to the requirements and tests of each of the relevant parts of EN 352-4 to -10, in addition to that of parts 1, 2 or 3, as appropriate.

The requirements of this document are concerned primarily with the physical and acoustic performance of earmuffs attached to head protection and/or face protection devices (mounted earmuffs).

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The sizing requirements enable the majority of the user population to be fitted satisfactorily by "medium size range" mounted earmuffs. Individuals with other sizes can be accommodated by "small size range" or "large size range" mounted earmuffs, which are required to be accompanied by information regarding the range of sizes which they are designed to fit.

The standard also calls for the values of sound attenuation provided by the mounted earmuffs (measured in accordance with EN ISO 4869-1) in order to assist users in selecting the most appropriate model of mounted earmuffs for their needs. Minimum values of sound attenuation are also specified.

A maximum variability in insertion loss, measured objectively after a series of performance tests, is specified. The objective test method only facilitates the making of comparative measurements, and the insertion loss values obtained will differ from the measured sound attenuation values. The method to determine the sound attenuation values which requires the mounted earmuffs to be tested whilst being worn by human test subjects, is regarded as providing the reference test method for the measurement of the acoustic performance of hearing protectors.

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1 Scope

This document specifies requirements for construction, design, performance, marking and user information for earmuffs attached to head protection and/or face protection devices, hereinafter referred to as 'mounted earmuffs'.

In particular, it specifies requirements regarding the sound attenuation of mounted earmuffs, measured in accordance with EN ISO 4869-1:2018.

The document does not apply to earmuffs outside the size range of headsizes as defined in this standard.

Because one model of earmuffs designed to be attached to head protection and/or face protection devices can be fitted to a number of other models and sizes of the carrier, this part of the standard sets out a series of physical and acoustic requirements for earmuffs when fitted to the specified model(s) or size(s) of head protection and/or face protection device.

All requirements apply to earmuffs fitted to one of the specified models or sizes of head protection and/or face protection device (the basic combination). An abbreviated set of requirements applies to the same model of earmuffs when fitted to the other specified models or sizes of head protection and/or face protection device (the supplementary combinations).

Ergonomic aspects are addressed by taking into account, within the requirements, the interaction between the user, the device and, where possible, the working environment in which the device is likely to be used (see Annex ZA and EN 458).

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 13819-1:2020, *Hearing protectors — Testing — Part 1: Physical test methods*

EN 13819-2:2020, *Hearing protectors — Testing — Part 2: Acoustic test methods*

EN ISO 4869-2:2018, *Acoustics — Hearing protectors — Part 2: Estimation of effective A-weighted sound pressure levels when hearing protectors are worn (ISO 4869-2:2018)*

3 Terms, definitions, symbols and abbreviations

3.1 Terms and definitions

For the purposes of this document, the following terms and definitions 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>

3.1.1

passive hearing protection

hearing protection that provides attenuation of external sounds not by means of electronics

Note 1 to entry: All hearing protectors have the characteristics of reducing noise by their design and type of material used. Devices that have only this function are called passive hearing protection.

[SOURCE: EN 352-1:2020, 3.1.1]