

Hearing protectors — Safety requirements and testing —

Part 1: Ear-muffs

The European Standard EN 352-1:1993 has the status of a
British Standard

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National foreword

This British Standard has been prepared under the direction of the Personal Safety Equipment Standards Policy Committee and is the English language version of EN 352-1 *Hearing protectors — Safety requirements and testing — Part 1: Ear-muffs*, published by the European Committee for Standardization (CEN). It supersedes BS 6344-1:1989 which is withdrawn.

EN 352-1 was produced as a result of international discussions in which the United Kingdom took an active part.

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Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, the EN title page, pages 2 to 16, an inside back cover and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

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English version

Hearing protectors — Safety requirements and testing — Part 1: Ear-muffs

Protecteurs contre le bruit — Exigences de
sécurité et essais — Partie 1: Serre-tête

Gehörschützer — Sicherheitstechnische
Anforderungen und Prüfungen —
Teil 1: Kapselgehörschützer

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CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

Central Secretariat: rue de Stassart 36, B-1050 Brussels

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Foreword

This European Standard has been produced by CEN/TC 159 “*Hearing protectors*”, the Secretariat of which is held by SIS.

This European Standard has been prepared under a mandate given to CEN by the Commission of the European Communities and the European Free Trade Association, and supports essential requirements of EC Directive(s).

The particular requirement for hearing protectors in relation to their ability to reduce noise to below daily limit levels is addressed in the standard by means of a requirement for attenuation performance, tested to EN 24869-1, to be declared, and by the setting of a minimum level of attenuation, enabling selection of suitable protectors for individual circumstances to be undertaken according to established practice.

Part 2 of this standard deals with ear-plugs and Part 3¹⁾ with ear-muffs for attachment to safety helmets. An associated European Standard EN 458, covers selection, use, care and maintenance of hearing protection.

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 February 1994, and conflicting national standards shall be withdrawn at the latest by February 1994.

This European Standard was approved and according to the CEN/CENELEC Internal Regulations, the following countries are bound to implement this European Standard: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

¹⁾ Currently in draft stage

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Introduction

The sizing requirements in the standard enable the great majority of the industrial population to be fitted satisfactorily by “Normal size range” size ear-muffs. Populations of other sizes may be accommodated by “Small/Large size range” size ear-muffs, which are required to be accompanied by information regarding the range of sizes which they are designed to fit.

The requirements and tests of the standard are concerned primarily with physical performance. However, the standard also calls for the values of sound attenuation afforded by the ear-muffs, as measured in accordance with EN 24869-1, to be provided in order to assist purchasers in selecting the most appropriate type of ear-muffs for their needs, and minimum values of sound attenuation are specified. A maximum variability in insertion loss, measured objectively after a series of performance tests, is specified.

The objective method is defined in ISO/TR 4869-3. It only facilitates the making of comparative measurements and insertion loss values obtained from its use will differ from the sound attenuation values measured using the procedures given in EN 24869-1. The latter, which require the ear-muffs 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.

1 Scope

This Part of the standard is concerned with ear-muffs and specifies constructional, design and performance requirements, methods of test, marking requirements and user information.

It calls for information to be made available concerning the sound attenuation characteristics of the ear-muffs measured in accordance with EN 24869-1, and defines a minimum level of attenuation required for compliance with this specification.

This Part of the standard does not deal with ear-muffs for attachment to a helmet or which are part of a helmet. Neither does it deal with the performance of electronic devices which may be incorporated within ear-muffs nor amplitude sensitive ear-muffs.

This standard does not deal with the performance of hearing protectors to impulsive noise.

2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

EN 24869-1:1992, *Acoustics — Hearing protectors — Part 1: Subjective method for the measurement of sound attenuation*.

ISO 4869-2:1992, *Acoustics — Hearing protectors — Part 2: Estimation of effective A-weighted sound pressure levels when hearing protectors are worn*.

ISO/TR 4869-3:1989, *Acoustics — Hearing protectors — Part 3: Simplified method for the measurement of insertion loss of ear-muff type protectors for quality inspection purposes*.

3 Definitions

For the purposes of this standard the following definitions apply.

3.1

acoustic test fixture (ATF)

a device that approximates certain dimensions of an average adult human head and is used for measuring the insertion loss of ear-muffs, as defined in ISO/TR 4869-3

3.2

cup

a hollow component which is mounted on the headband and to which a cushion and a liner are usually fitted

3.3

cushion

a deformable component, usually containing a foam plastic or liquid filling, fitted to the rim of the cup to improve the comfort and fit of the ear-muffs on the head