



**NSAI**  
Standards

Irish Standard  
I.S. EN 458:2016

# Hearing protectors - Recommendations for selection, use, care and maintenance - Guidance document

**I.S. EN 458:2016**

*Incorporating amendments/corrigenda/National Annexes issued since publication:*

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## National Foreword

I.S. EN 458:2016 is the adopted Irish version of the European Document EN 458:2016, Hearing protectors - Recommendations for selection, use, care and maintenance - Guidance document

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

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English Version

## Hearing protectors - Recommendations for selection, use, care and maintenance - Guidance document

Protecteurs individuels contre le bruit -  
Recommandations relatives à la sélection, à  
l'utilisation, aux précautions d'emploi et à l'entretien -  
Document guide

Gehörschützer - Empfehlungen für Auswahl, Einsatz,  
Pflege und Instandhaltung - Leitfaden

This European Standard was approved by CEN on 8 August 2015.

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## **European foreword**

This document (EN 458:2016) 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of an identical text or by endorsement, at the latest by September 2016, and conflicting national standards shall be withdrawn at the latest by September 2016.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 458:2004.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association.

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

**EN 458:2016 (E)****Introduction**

This European Standard is intended to guide employers, supervisors and safety advisors. Additionally, the standard gives information to all who need to use hearing protectors.

Hearing protectors are items of personal protective equipment (PPE) intended to reduce the harmful effects that sound and noise may have on the hearing.

Guidance is provided on how to best select, use and take care of such devices. Tools to estimate the noise exposure level, when a certain hearing protector is used, are also provided.

National bodies may develop national application documents based on this standard.

Hearing protectors are generally available in two main forms: earmuffs and earplugs. Both forms are available with additional features and functions. All have their advantages and disadvantages in terms of attenuation, comfort, ease of use, communication facilities and cost.

In hearing conservation programmes noise hazard areas are identified and the personal noise exposure is assessed. Before a suitable hearing protector is considered, priority should be given to reducing noise at source and/or reducing the exposure time.

If the use of a hearing protector is found necessary or advisable, choosing optimum devices is a complex task. The most important concern is for the protector to provide sufficient attenuation.

It is often desirable to retain the ability to hear speech and warning signals. To achieve this, the hearing protector should not overprotect. In particular, this needs attention at moderate noise levels.

Hearing protectors are supplied with attenuation data in various formats. The attenuation is expressed in decibels and has been derived from laboratory tests. It is important to note that these data have been achieved under controlled laboratory conditions using trained test subjects. Under real working conditions, the attenuation achieved by the user may be lower than that generated by the laboratory testing.

The performance of hearing protectors is subject to natural variability amongst users. Correct fitting, training, regular inspection and user motivation are important to obtain the desired protection. Due to the natural variability, it is not possible to calculate the exact attenuation that a certain hearing protector will give for an individual. If a more accurate prediction is required, some form of individual attenuation check can be made. At high noise level exposures it is advisable to seek expert advice. In some cases dual protection i.e. the use of an earmuff and an earplug combination, may be required.

For hearing protectors to be effective they should be used at all times when the user is in a potentially hazardous noise environment. When selecting hearing protectors, attention should be given to factors influencing comfort and user preference.

## 1 Scope

This European Standard gives recommendations for the selection, use, care and maintenance of hearing protectors.

## 2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. 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 352-2, *Hearing protectors — General requirements — Part 2: Ear-plugs*

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

EN 352-4, *Hearing protectors — Safety requirements and testing — Part 4: Level-dependent ear-muffs*

EN 352-5, *Hearing protectors — Safety requirements and testing — Part 5: Active noise reduction ear-muffs*

EN 352-6, *Hearing protectors — Safety requirements and testing — Part 6: Ear-muffs with electrical audio input*

EN 352-7, *Hearing protectors — Safety requirements and testing — Part 7: Level-dependent ear-plugs*

EN 352-8, *Hearing protectors — Safety requirements and testing — Part 8: Entertainment audio ear-muffs*

EN 24869-1, *Acoustics — Hearing protectors — Subjective method for the measurement of sound attenuation (ISO 4869-1)*

EN 61672-1, *Electroacoustics — Sound level meters — Part 1: Specifications (IEC 61672-1)*

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

EN ISO 7731, *Ergonomics — Danger signals for public and work areas — Auditory danger signals (ISO 7731)*

EN ISO 9612, *Acoustics — Determination of occupational noise exposure — Engineering method (ISO 9612)*

EN ISO 9921, *Ergonomics — Assessment of speech communication (ISO 9921)*

## 3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

### 3.1

#### **daily noise exposure level ( $L_{EX,8h}$ )**

A-weighted noise exposure level normalized to a nominal 8 h working day

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