

SLOVENSKI STANDARD

SIST EN ISO 389-7:2020

01-februar-2020

Nadomešča:

SIST EN ISO 389-7:2006

SIST EN ISO 389-7:2006/A1:2016

**Akustika - Referenčna ničla za umerjanje avdiometrov - 7. del: Referenčni prag
slišnosti v razmerah prostega in difuznega zvočnega polja (ISO 389-7:2019)**

Acoustics - Reference zero for the calibration of audiometric equipment - Part 7:
Reference threshold of hearing under free-field and diffuse-field listening conditions (ISO
389-7:2019)

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Acoustique - Zéro de référence pour l'étalonnage d'équipements audiométriques - Partie
7: Niveau liminaire de référence dans des conditions d'écoute en champ libre et en
champ diffus (ISO 389-7:2019)

Ta slovenski standard je istoveten z: EN ISO 389-7:2019

ICS:

13.140	Vpliv hrupa na ljudi	Noise with respect to human beings
17.140.01	Akustična merjenja in blaženje hrupa na splošno	Acoustic measurements and noise abatement in general

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en

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EUROPEAN STANDARD

EN ISO 389-7

NORME EUROPÉENNE

EUROPÄISCHE NORM

November 2019

ICS 13.140

Supersedes EN ISO 389-7:2005

English Version

Acoustics - Reference zero for the calibration of audiometric equipment - Part 7: Reference threshold of hearing under free-field and diffuse-field listening conditions (ISO 389-7:2019)

Acoustique - Zéro de référence pour l'étalonnage d'équipements audiométriques - Partie 7: Niveau liminaire de référence dans des conditions d'écoute en champ libre et en champ diffus (ISO 389-7:2019)

This European Standard was approved by CEN on 20 October 2019.

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 COMMITTEE FOR STANDARDIZATION
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European foreword

This document (EN ISO 389-7:2019) has been prepared by Technical Committee ISO/TC 43 "Acoustics" in collaboration with Technical Committee CEN/TC 211 "Acoustics" 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 2020, and conflicting national standards shall be withdrawn at the latest by May 2020.

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 ISO 389-7:2005.

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, 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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INTERNATIONAL
STANDARD

ISO
389-7

Third edition
2019-10

**Acoustics — Reference zero for
the calibration of audiometric
equipment —**

Part 7:

**Reference threshold of hearing under
free-field and diffuse-field listening
conditions**

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*Acoustique — Zéro de référence pour l'étalonnage d'équipements
audiométriques — 7:2020*

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*Partie 7: Niveau liminaire de référence dans des conditions d'écoute
en champ libre et en champ diffus*



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CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Fax: +41 22 749 09 47
Email: copyright@iso.org
Website: www.iso.org

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ISO 389-7:2019(E)

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 43, *Acoustics*.

This third edition cancels and replaces the second edition (ISO 389-7:2005), which has been technically revised to incorporate the Amendment ISO 389-7:2005/Amd.1:2016. The main changes compared to the previous edition are as follows:

- the reference thresholds of hearing at 20 Hz under the conditions of free-field and diffuse-field listening and the reference threshold of hearing at 18 000 Hz under the condition of free-field listening were recalculated using additional experimental data;
- the Bibliography was updated.

A list of all parts in the ISO 389 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

In some audiological applications, the test signals are delivered by means of loudspeakers, either in a free sound field or in a diffuse sound field. This document specifies the reference zero for the calibration of audiometric equipment used for sound field audiometry. Corresponding audiometric test methods are specified in ISO 8253-1 and ISO 8253-2.

In common with other subjective phenomena, the threshold of hearing varies in detail from person to person but, for a group of otologically normal persons within a restricted age range, values for the central tendency can be determined to characterize the group. This document and other parts of ISO 389 specify threshold data applicable to otologically normal persons in the age range from 18 years to 25 years.

The data specified in this document relate to

- a) pure tones heard under conditions of binaural listening in free progressive plane waves with the subject directly facing the source of sound (frontal incidence), and with the sound pressure level measured in the free progressive wave at the centre position of the listener's head with the listener absent;
- b) one-third-octave bands of (white or pink) noise heard under conditions of binaural listening in a diffuse sound field with the sound pressure level measured in the sound field at the centre position of the listener's head with the listener absent.

For frequencies up to 8 kHz, each set of data may be equally applied to any other bands of (white or pink) noise for which the bandwidth is less than the critical bandwidth.

The data are based on an assessment of technical information provided by laboratories in different countries representing the most reliable data available at the time. For information, a note on the derivation of the reference values and the origin of the data is given in [Annex A](#).

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