

**Akustika - Audiomeetrilised katsemeetodid -
Osa 2: Heliväljaaudiomeetria puhastooni ja
kitsaribaliste kontrollsignaalidega**

Acoustics - Audiometric test methods - Part 2:
Sound field audiometry with pure tone and narrow-
band test signals

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN ISO 8253-2:2001 sisaldab Euroopa standardi EN ISO 8253-2:1998 ingliskeelset teksti.

Standard on kinnitatud Eesti Standardikeskuse 18.06.2001 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teatajas.

Standard on kättesaadav Eesti standardiorganisatsioonist.

This Estonian standard EVS-EN ISO 8253-2:2001 consists of the English text of the European standard EN ISO 8253-2:1998.

This standard is ratified with the order of Estonian Centre for Standardisation dated 18.06.2001 and is endorsed with the notification published in the official bulletin of the Estonian national standardisation organisation.

The standard is available from Estonian standardisation organisation.

ICS 13.140

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ICS 13.140

Descriptors: See ISO document

English version

Acoustics - Audiometric test methods - Part 2: Sound field
audiometry with pure tone and narrow-band test signals (ISO
8253-2:1992)

Acoustique - Méthodes d'essais audiométriques - Partie 2:
Audiométrie en champ acoustique avec des sons purs et
des bruits à bande étroite comme signaux d'essai (ISO
8253-2:1992)

Akustik - Audiometrische Prüfverfahren - Teil 2: Schallfeld-
Audiometrie mit reinen Tönen und schmalbandigen
Prüfsignalen (ISO 8253-2:1992)

This European Standard was approved by CEN on 31 January 1998.

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 Central Secretariat 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 Central Secretariat has the same status as the official versions.

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COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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

Foreword

The text of the International Standard from Technical Committee ISO/TC 43 "Acoustics" of the International Organization for Standardization (ISO) has been taken over as an European Standard by Technical Committee CEN/TC 211 "Acoustics", the secretariat of which is held by DS.

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 August 1998, and conflicting national standards shall be withdrawn at the latest by August 1998.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

Endorsement notice

The text of the International Standard ISO 8253-2:1992 has been approved by CEN as a European Standard without any modification.

NOTE: Normative references to International Standards are listed in annex ZA (normative).

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Annex ZA (normative)
Normative references to international publications
with their relevant European publications

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.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN</u>	<u>Year</u>
ISO 266	1975	Acoustics - Preferred frequencies for measurements	EN ISO 266	1997

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INTERNATIONAL
STANDARD

ISO
8253-2

First edition
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Acoustics — Audiometric test methods —

Part 2:

Sound field audiometry with pure tone and
narrow-band test signals

Acoustique — Méthodes d'essais audiométriques —

*Partie 2: Audiométrie en champ acoustique avec des sons purs et des
bruits à bande étroite comme signaux d'essai*



Reference number
ISO 8253-2:1992(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.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 8253-2 was prepared by Technical Committee ISO/TC 43, *Acoustics*.

ISO 8253 consists of the following parts, under the general title *Acoustics — Audiometric test methods*:

- *Part 1: Basic pure tone air and bone conduction threshold audiometry*
- *Part 2: Sound field audiometry with pure tone and narrow-band test signals*
- *Part 3: Speech audiometry*

Annexes A, B and C of this part of ISO 8253 are for information only.

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Introduction

ISO 6189 and ISO 8253-1 cover procedures for the determination of thresholds of hearing using pure tones presented to the subject by means of earphone or bone vibrator.

This part of ISO 8253 covers procedures for the determination of thresholds of hearing in a sound field. In general, sound field testing implies binaural listening to a test signal, presented by means of one or more loudspeakers in a test room. The test signal may be a pure tone, a frequency-modulated tone or a narrow band of noise. The acoustical characteristics of the sound field are determined by the choice of test signal, by the number and acoustical properties of the loudspeakers used, as well as by the acoustical characteristics of the test room.

Sound field audiometry may be used for various purposes, for example the evaluation of hearing acuity in young children and the determination of the functional gain of a hearing aid when worn by a particular listener.

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Acoustics — Audiometric test methods —

Part 2:

Sound field audiometry with pure tone and narrow-band test signals

1 Scope

This part of ISO 8253 specifies relevant test signal characteristics, requirements for free, diffuse and quasi-free sound fields, and procedures for sound field audiometry using pure tones, frequency modulated tones or other narrow-band test signals presented by means of one or more loudspeakers, primarily for the purpose of determining hearing threshold levels in the frequency range from 125 Hz to 12 500 Hz.

It does not include specifications for the use of hand-held loudspeakers.

Speech as a test signal is not covered.

The purpose of this part of ISO 8253 is to ensure that tests of hearing, using sound field audiometry, give as high a degree of accuracy and reproducibility as possible.

Examples of graphical representations of the results and a bibliography are given in annexes A and C.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO 8253. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this part of ISO 8253 are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 226:1987, *Acoustics — Normal equal-loudness level contours.*

ISO 266:1975, *Acoustics — Preferred frequencies for measurements.*

ISO 8253-1:1989, *Acoustics — Audiometric test methods — Part 1: Basic pure tone air and bone conduction threshold audiometry.*

IEC 225:1966, *Octave, half-octave and third-octave band filters intended for the analysis of sounds and vibrations.*

IEC 5817:1986, *High fidelity audio equipment and systems. Minimum performance requirements — Part 7: Loudspeakers.*

IEC 645-1:1992, *Audiometers — Part 1: Pure tone audiometers.*

IEC 651:1979, *Sound level meters.*

3 Definitions

For the purposes of this part of ISO 8253, the following definitions apply.

3.1 air conduction: The transmission of sound through the external and middle ear to the internal ear.

3.2 otologically normal person: A person in a normal state of health who is free from all signs or symptoms of ear disease and from obstructing wax in the ear canals, and who has no history of undue exposure to noise.