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МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ

Acoustics — Reference levels for narrow-band masking noise

Acoustique — Niveaux de référence pour bruit de masque en bande étroite

Reference number
ISO 8798:1987 (E)



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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.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council. They are approved in accordance with ISO procedures requiring at least 75 % approval by the member bodies voting.

International Standard ISO 8798 was prepared by Technical Committee ISO/TC 43, *Acoustics*.

Users should note that all International Standards undergo revision from time to time and that any reference made herein to any other International Standard implies its latest edition, unless otherwise stated.

Acoustics — Reference levels for narrow-band masking noise

0 Introduction

ISO 389 together with ISO 389/Add.1 and ISO 389/Add.2 specify the standard reference zero for the scale of hearing threshold level applicable to pure tone air conduction audiometers. ISO 7566 specifies the corresponding data for pure tone bone conduction audiometers. For clinical diagnostic and other audiometric purposes, it is often necessary to prevent the test signal from being heard through the ear not being tested by means of masking. This is usually achieved by the presentation of a narrow band of noise the centre frequency of which coincides with the frequency of the pure tone signal and which is delivered by means of the ordinary supra-aural earphones of the audiometer.

IEC Publication 645-1 specifies that masking levels for narrow-band noise be calibrated in terms of effective masking level and that the noise bandwidth be between one-third and one-half of an octave.

The noise level required to just mask a pure tone of a given hearing level has been calculated from known psychoacoustical data for ipsilateral masking, i.e. when the tone to be masked and the masking noise are presented through the same earphone to the same ear.

In most audiometric applications the masking noise is, however, applied by means of an earphone on the ear not being tested. The exact level of the tone reaching that ear from the transducer on the test side is influenced by skull attenuation and by the presence of the occlusion effect from the masker earphone. These phenomena have to be considered with regard to masking levels used in the audiometric procedure.

Insert earphones are sometimes used to deliver the masking noise. However, this International Standard does not specify reference levels for narrow-band masking noise for such transducers since no standardized reference equivalent threshold sound pressure levels are available.

1 Scope and field of application

This International Standard specifies reference levels for the calibration of narrow-band masking noise presented by air conduction from an earphone in pure tone audiometry. The data are given in terms of levels to be added to the reference equivalent threshold sound pressure levels for the corresponding pure-tone frequencies when the masking earphone is placed on the appropriate acoustic coupler or artificial ear.

Data are given for noise bandwidths of one-third and one-half octaves.

Some notes on the derivation of the reference levels are given in the annex.

2 References

ISO 389, *Acoustics — Standard reference zero for the calibration of pure tone air conduction audiometers.*

ISO 389/Add.1, *Acoustics — Standard reference zero for the calibration of pure tone audiometers — ADDENDUM 1.*