Australian Standard®

OCCLUDED-EAR SIMULATOR FOR THE MEASUREMENT OF EARPHONES COUPLED TO THE EAR BY EAR INSERTS

This Australian standard was prepared by Committee AK/11, Audiology. It was approved on behalf of the Council of the Standards Association of Australia on 25 November 1986 and published on 2 February 1987.

The following interests are represented on Committee AK/11:

Audiological Society of Australia
Better Hearing Australia
Department of Defence
Hearing Aid Council of Australia
National Acoustical Laboratories
Otolaryngological Society of Australia
State Pollution Control Commission of New South Wales
University of Melbourne
University of Queensland

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PREFACE

This standard was prepared by the Association's Committee on Audiology. It is identical with and has been reproduced from IEC Publication 711, Occluded-ear Simulator for the Measurement of Earphones Coupled to the Ear by Ear Inserts.

The purpose of this standard is to specify an occluded-ear simulator intended for the calibration of insert earphones in the frequency range 100 Hz to 10 000 Hz in terms of the sound pressure at the eardrum.

It should be noted that this standard does not supersede AS 1089—1971, Reference Coupler for the Measurement of the Electro-acoustic Characteristics of Hearing Aid Earphones, but is an addition to it.

For the purpose of this Australian standard, the text of the IEC standard used herein should be modified as follows:

Cross-reference: The reference to the IEC standard should be replaced by a reference to the Australian standard as follows:

Reference to IEC standard	*Appropriate Australian Standard*
IEC 126, IEC Reference Coupler for the Measurement of Hearing Aids Using Earphones Coupled to the Ear by Means of Ear Inserts	AS 1089, Reference Coupler for the Measurement of the Electro-acoustic Characteristics of Hearing Aid Earphones

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STANDARDS ASSOCIATION OF AUSTRALIA

Australian Standard

for

OCCLUDED-EAR SIMULATOR FOR THE MEASUREMENT OF EARPHONES COUPLED TO THE EAR BY EAR INSERTS

1. Scope

This standard specifies an occluded-ear simulator intended for the calibration of insert earphones in the frequency range 100 Hz to 10 000 Hz in terms of the sound pressure at the eardrum.

The occluded-ear simulator is also designed as the basis for a later extension intended to simulate the complete ear canal for the calibration of earphones coupled to the ear by means of open mould fittings or similar devices. A document for such a device is under consideration.

2. Object

The occluded-ear simulator simulates the median values of relevant acoustical characteristics of adult normal human ears.

The occluded-ear simulator does not simulate the leakage between an earmould and a human ear canal; therefore, the results obtained with the simulator may deviate from the performance of an insert earphone on a real ear, especially at low frequencies.

Moreover, large performance variations among individual ears will occur and this should be borne in mind when employing results obtained with the simulator.

3. Definitions

For the purpose of this standard, the following definitions apply:

3.1 *Ear insert*

An ear insert is a device used to provide the acoustic coupling between an earphone and the ear canal (e.g. an earmould or a similar device with or without a connecting tube).

3.2 *Insert earphone*

An insert earphone is a small earphone coupled to the ear canal by means of an ear insert or attached to a connecting element which is inserted into the ear canal. This ear insert may be a part of the insert earphone.

3.3 *Ear insert simulator*

An ear insert simulator (e.g. earmould simulator) is an insert which terminates the entrance of the ear simulator and provides for passage of sound into the occluded-ear simulator through an opening on its axis.