

Australian Standard™

**Electroacoustics—Audiological
equipment**

**Part 3: Auditory test signals of short
duration for audiometric and neuro-
otological purposes**

[IEC title: Audiometers, Part 3: Auditory test signals of short
duration for audiometric and neuro-otological purposes]

This Australian Standard was prepared by Committee AV-003, Acoustics Human Effects. It was approved on behalf of the Council of Standards Australia on 31 July 2002 and published on 16 September 2002.

The following are represented on Committee AV-003:

Association of Australian Acoustical Consultants
Association of Consulting Engineers Australia
Australian Acoustical Society
Australian Chamber of Commerce and Industry
Australian Hearing
Institution of Engineers Australia
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PREFACE

This Standard was prepared by the Australian members of the Joint Standards Australia/Standards New Zealand Committee AV-003, Acoustics Human Effects to be used as a means to demonstrate compliance with the relevant essential principles in new medical device legislation.

After consultation with stakeholders in both countries, Standards Australia and Standards New Zealand decided to develop this Standard as an Australian, rather than an Australian/New Zealand Standard.

This Standard is identical with and has been reproduced from IEC 60645-3:1994, *Audiometers, Part 3: Auditory test signals of short duration for audiometric and neuro-otological purposes*.

The objective of this Standard is to specify a means of describing the physical characteristics of audiometric test and reference signals of short duration and methods for their measurement. The Standard also specifies a psychoacoustic method for determining the level of the test signal in terms of hearing level.

This Standard provides for the use of the following Australian and Australian/New Zealand Standards as equivalents to particular International Standards referenced herein:

<i>Reference to International Standard</i>		<i>Australian/New Zealand Standard</i>	
IEC		AS/NZS	
60373	Mechanical coupler for measurements of bone vibrators	1591	Acoustics—Instrumentation for audiometry
		1591.4	Part 4: A mechanical coupler for calibration of bone vibrators
		AS	
60651	Sound level meters	1259	Acoustics—Sound level meters
		1259.1	Part 1: Non-integrating
60711	Occluded-ear simulator for the measurement of earphones coupled to the ear by ear inserts	2928	Occluded-ear simulator for the measurement of earphones coupled to the ear by ear inserts

As this Standard is reproduced from an International Standard, the following applies:

- (a) Its number does not appear on each page of text and its identity is shown only on the cover and title page.
- (b) In the source text ‘this part of IEC 645’ should read ‘this Australian Standard’.
- (c) A full point substitutes for a comma when referring to a decimal marker.

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INTRODUCTION

This International Standard provides a means of specifying acoustic and vibratory test signals of short duration used for audiometric and neuro-otological purposes. Examples of test methods, where such signals are commonly used, are the recording of brainstem evoked potentials and evoked oto-acoustic emissions. Reference broadband clicks and brief tones are described in order to provide a basis for calibration and as a recommendation for use when there is no specific reason to have an alternative signal. The method of measurement of acoustic and vibratory signals is described as well as guidance given regarding psychoacoustical calibration for air and bone conduction stimulation.

AUSTRALIAN STANDARD

Electroacoustics—Audiological equipment

Part 3:

Auditory test signals of short duration for audiometric and neuro-otological purposes**1 Scope**

This International Standard specifies a means of describing the physical characteristics of audiometric test and reference signals of short duration and methods for their measurement. The standard also specifies a psychoacoustic method for determining the level of the test signal in terms of hearing level. Requirements for the information to be given in an instruction manual are also included. This standard does not describe the method of use for test signals of short duration or specify the waveforms to be used in clinical practice.

The object of this standard is to ensure that audiometric stimuli of short duration are specified and measured in the same way and that calibrations are carried out using defined methods.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this part of IEC 645. At the time of publication, the editions indicated were valid. All normative documents are subject to revision, and parties to agreements based on this part of IEC 645 are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

IEC 126: 1973, *IEC reference coupler for the measurement of hearing aids using earphones coupled to the ear by means of ear inserts*

IEC 303: 1970, *IEC provisional reference coupler for the calibration of earphones used in audiometry*

IEC 318: 1970, *An IEC artificial ear, of the wideband type, for the calibration of earphones used in audiometry*

IEC 373: 1990, *Mechanical coupler for measurements of bone vibrators*

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

IEC 651: 1979, *Sound level meters*

IEC 711: 1981, *Occluded-ear simulator for the measurement of earphones coupled to the ear by ear inserts*

ISO 8253-1: 1991, *Acoustics – Audiometric test methods – Part 1: Basic pure tone air and bone conduction threshold audiometry*