AS 60118.9—2007
IEC 60118-9 Ed. 1.0 (1985)
Reconfirmed 2019

Australian Standard®

Hearing aids

Part 9: Methods of measurement of characteristics of hearing aids with bone vibrator output

This Australian Standard® was prepared by Committee AV-003, Acoustics—Human Effects. It was approved on behalf of the Council of Standards Australia on 3 November 2006. This Standard was published on 20 February 2007.

The following are represented on Committee AV-003:

- Association of Accredited Certification Bodies
- Association of Australian Acoustical Consultants
- Association of Consulting Engineers Australia
- Audiological Society of Australia
- Australasian Faculty of Occupational Medicine
- Australian Acoustical Society
- Australian Chamber of Commerce and Industry
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- New South Wales Nurses, Association
- New Zealand Audiological Society
- Royal Institute of Naval Architects
- Safety Institute of Australia
- The Australian Society of Otolaryngological Head and Neck Surgery
- Victorian WorkCover Authority
- WorkCover New South Wales

This Standard was issued in draft form for comment as DR 06474.

Standards Australia wishes to acknowledge the participation of the expert individuals that contributed to the development of this Standard through their representation on the Committee and through public comment period.

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STANDARDS AUSTRALIA

RECONFIRMATION

OF
AS 60118.9—2007
Hearing aids
Part 9: Methods of measurement of characteristics of hearing aids with bone vibrator output

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Technical Committee AV-003 has reviewed the content of this publication and in accordance with Standards Australia procedures for reconfirmation, it has been determined that the publication is still valid and does not require change.

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Approved for reconfirmation in accordance with Standards Australia procedures for reconfirmation on 22 August 2019.

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NOTES

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Hearing aids

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First published as AS 60118.9—2007.

Published by Standards Australia GPO Box 476, Sydney, NSW 2001, Australia

ISBN 0 7337 8038 5

PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee AV-003, Acoustics—Human Effects.

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

The objective of this Standard is to specify methods of measurement of the characteristics of hearing aids using bone vibrator output.

This Standard is identical with IEC 60118-9 Ed. 1.0 (1985), *Hearing aids - Part 9: Methods of measurement of characteristics of hearing aids with bone vibrator output*.

As this Standard is reproduced from an International Standard its number does not appear on each page of text and its identity is shown only on the cover and title page.

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INTRODUCTION

IEC 60118-0, *Hearing aids – Part 0: Measurement of electroacoustical characteristics*, gives information on methods of test for air conduction hearing aids. the majority of hearing aids in use are of this type but a small percentage use a bone vibrator instead of an earphone. The use of bone vibrator requires a different methods of measuring the output from the hearing aid and also makes it impractical to measure amplification directly in terms of acoustic gain.

Amplification in t he case of an air conduction hearing aid is expressed as the difference between the output sound pressure level in an acoustic coupler or ear simulator and the input sound pressure level measured in a specified manner. However, with bone conduction hearing aids the input is in terms of sound pressure level but the output will be in terms of mechanical vibration measured as a alternating force of force level.

This standard defines a method of expressing the input/output ratio as a acousto-mechanical sensitivity level measured on a mechanical coupler according to the second edition of IEC 60373, *Mechanical coupler for measurements on bone vibrators..*

By means of information provided in this standard the performance of hearing aids with bone vibrator outputs which do not form an integral part of the hearing aid for example body worn hearing aids, may be measured in a similar manner to aids with air conduction outputs as described in IEC 60118-0.

Where the bone vibrator forms an integral part of the hearing aid, or where it is attached in some fixed manner to the hearing aid (e.g. a headband type bone conduction hearing aid), performance cannot be measured in the same way as for body-worn aids, due to the large dimensions of the mechanical coupler having to be in contact with the spectacle arm. This standard recommends a pressure method of controlling the input sound pressure level, to the hearing aid microphone.

The second edition of IEC 60373, describes the means of measuring the output from a bone vibrator.

STANDARDS AUSTRALIA

Australian Standard

Hearing aids—Part 9: Methods of measurement of characteristics of hearing aids with bone vibrator output

1 Scope

This standard specifies methods of measurement of the characteristics of hearing aids using bone vibrator output.

2 Object

The methods described will produce a suitable basis for the exchange of information or for direct comparison of the electroacoustical characteristics of hearing aids using bone vibrator output. These methods are chosen to be practical and reproducible and are based on selected fixed parameters.

The results obtained by the methods specified herein express the performance under the conditions of the test, but will not necessarily agree exactly with the performance of the hearing aid under practical conditions of use.

3 General

3.1 Throughout this standard all sound pressure levels specified are referred to 20 μPa. When appropriate, sound pressure level will be abbreviated to SPL.

3.2 In this standard, reference is made to the following IEC publications:

References to international standards that are struck through in this clause are replaced by references to Australian or Australian/New Zealand Standards that are listed immediately thereafter and identified by shading. Any Australian or Australian/New Zealand Standard that is identical to the International Standard it replaces is identified as such.

~~IEC 60068, *Basic environmental testing procedures*~~

AS 60068, *Environmental testing* (identical to IEC 60068)

~~IEC 60118-0, *Hearing aids – Part 0: Measurement of electroacoustical characteristics*~~

AS 60118.0, *Hearing aids,* Part 0: *Measurement of electroacoustical characteristics* (identical to IEC 60118-0)

~~IEC 60118-7, *Hearing aids – Part 7: Measurement of the performance characteristics of hearing aids for quality inspection for delivery purposes*~~

AS 60118.7, *Hearing aids,* Part 7: *Measurement of the performance characteristics of hearing aids for quality inspection for delivery purposes* (identical to IEC 60118-7)

IEC 60263, *Scales and sizes for plotting frequency characteristics and polar diagrams*