Australian/New Zealand Standard™

Acoustics—Hearing protectors

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This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee AV-003, Acoustics, Human Effects. It was approved on behalf of the Council of Standards Australia on 30 November 2001 and on behalf of the Council of Standards New Zealand on 3 December 2001. It was published on 18 January 2002.

The following interests 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
Australian and New Zealand Environment and Conservation Council
Consumers Federation of Australia
Department of Labour, New Zealand
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University of Western Sydney

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This Standard was issued in draft form for comment as DR 00244.

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Acoustics—Hearing protectors

Originated as AS 1270—1975.
Previous edition AS/NZS 1270:1999
Fifth edition 2002.

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Jointly published by Standards Australia International Ltd, GPO Box 5420, Sydney, NSW 2001 and Standards New Zealand, Private Bag 2439, Wellington 6020

ISBN 0 7337 4261 0

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PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee AV-003, Acoustics, Human Effects, to supersede AS/NZS 1270:1999, *Acoustics—Hearing protectors.*

The major changes from the 1999 edition are the revision of the physical test requirements (Section 3) and the addition of guidance for testing specialist devices (Section 5). The method for the measurement of the real-ear attenuation of hearing protectors (Section 4) is unchanged from the 1999 edition.

The physical test requirements specified in this Standard represent a compromise between the extensive physical testing of hearing protectors required by European Standards and the absence of physical test requirements in United States Standards. The test regime specified in this Standard comprises a practical, cost-effective approach that seeks to ensure that hearing protectors are sufficiently robust to maintain their acoustic performance when in use.

In the interests of consistency, the European test procedures and related requirements have been adopted for physical tests that are common to this Standard and the corresponding draft European Standards, namely, prEN 13819.1:1999, *Hearing protectors—Testing*, Part 1: *Physical test methods* and prEN 352:1999, *Hearing protectors—General requirements.* This Standard includes one test not currently included in the European Standards, namely, the dry heat (50°C) test. This test was judged applicable to Australian and New Zealand conditions. One physical test has been added in this edition of the Standard, namely, the headband flexing test required by the European Standards.

In response to the increasing numbers of specialist hearing protectors available to users, guidance for testing such devices is provided in this edition. Specialist hearing protectors offer some method in addition to or other than a simple blocking of the sound transmission. Examples of such devices include level-dependent earmuffs and noise cancelling headsets. Currently there is no recognized procedure for the testing of these devices in their operating state. However, recommendations are given for undertaking passive testing. Once appropriate tests for devices in their operating state have been developed, this Standard will be revised accordingly.

The term ‘normative’ has been used in this Standard to define the application of the appendix to which it applies. A ‘normative’ appendix is an integral part of the Standard. An ‘informative’ appendix is only for information and guidance.

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S E C T I O N 1 S C O P E A N D G E N E R A L

1.1 SCOPE

This Standard specifies requirements for the design, materials, and performance of conventional hearing protectors. It also provides guidance on the general requirements for, and the physical and acoustic testing of, specialist hearing protectors.

1.2 APPLICATION

Conventional hearing protectors shall comply with the general requirements of Section 2 and with the physical requirements of Section 3. The real-ear attenuation shall be measured in accordance with Section 4. When testing specialist hearing protectors, consideration should be given to the guidance provided in Section 5.

1.3 REFERENCED DOCUMENTS

The following Standards are referred to in this Standard:

AS	
1633	Acoustics—Glossary of terms and related symbols
2586	Audiometers
AS/NZS	
1269	Occupational noise management
1269.3	Part 3: Hearing protector program
4476	Acoustics—Octave-band and fractional-octave-band filters
ISO	
4869	Acoustics—Hearing protectors
TR 4869-3	Part 3: Simplified method for the measurement of insertion loss of ear-muff type protectors for quality inspection purposes
8253	Acoustics—Audiometric test methods (series)
ANSI	
S12.6	Methods for measuring the real-ear attenuation of hearing protectors
prEN	
13819	Hearing protectors—Testing
13819.1	Part 1: Physical test methods

1.4 DEFINITIONS

For the purpose of this Standard, the definitions in AS 1633 and those below apply.

1.4.1 Diffuse sound field

A sound field of uniform sound pressure level in which, for purposes of measurements under Clause 4.2.2 of this Standard, point-to-point, all directions of sound propagation are equally probable.

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