AS/NZS 1269.4:2005
(Incorporating Amendment No.1)

Australian/New Zealand Standard™

Occupational noise management

Part 4: Auditory assessment

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 27 January 2005 and on behalf of the Council of Standards New Zealand on 11 February 2005.
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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
National Acoustic Laboratories
Department of Consumer & Employment Protection, WorkSafe Division, W.A.
Department of Labour, New Zealand
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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 1269.4, *Occupational noise management*, Part 4: *Auditory assessment.*

*This Standard incorporates Amendment No. 1 (*September 2005*). The changes required by the Amendment are indicated in the text by a marginal bar and amendment number against the clause, note, table, figure or part thereof affected.*

This is Part 4 in a series of Standards as follows:

AS/NZS		
1269	Occupational noise management	
1269.0	Part 0:	Overview and general requirements
1269.1	Part 1:	Measurement and assessment of noise emissions and exposure
1269.2	Part 2:	Noise control management
1269.3	Part 3:	Hearing protector program
1269.4	Part 4:	Auditory assessment (this Standard)

The objective of this series of Standards is to provide requirements and guidance on all facets of occupational noise management. It is recommended that the reader refer to all Parts of AS/NZS 1269 to better understand all relevant terminology and objectives of occupational noise management.

This Standard lays down requirements and procedures for conducting pure tone air conduction threshold audiometry that is used to monitor the hearing of individuals exposed to noise at work. Audiometric testing of persons exposed to excessive noise may be used for four distinct purposes—

(a) the identification and documentation of existing hearing loss;

(b) the early detection of deterioration of hearing in persons exposed to excessive noise;

(c) the prompt direction of those individuals who are identified as having a hearing loss to an appropriate rehabilitation program; and

(d) the supply of any special communication or warning system that may be required within the workplace for an individual with a hearing loss.

It is not sufficient to diagnose the cause of an individual's hearing threshold impairment or for the determination of percentage loss of hearing for compensation purposes. The Standard prescribes the conditions under which audiometry should be carried out, the form of the tests, and by whom the tests should be performed. It recommends the procedure for interpreting the test results and for comparison of a reference audiogram with follow-up (monitoring) audiograms, together with the course of action to be followed when deterioration of thresholds is detected.

The main changes from the 1998 edition of the Standard are its application to people exposed at work to ototoxic agents and inclusion of an informative appendix on otoacoustic emissions (Appendix H).

In this Standard, cognizance is taken of ISO 6189, *Acoustics—Pure tone air conduction threshold audiometry for hearing conservation purposes.*

Where the number of an IEC Standard is provided in brackets after an Australian Standard number the IEC Standard applies to New Zealand only and the Australian Standard applies to Australia only.

The terms ‘normative’ and ‘informative’ have been used in this Standard to define the application of the appendix to which they apply. A ‘normative’ appendix is an integral part of a Standard, whereas an ‘informative’ appendix is only for information and guidance.

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FOREWORD

Other Parts of this series of Standards stress the importance of continuous monitoring of all phases of noise reduction and personal protector programs so that noise risks are addressed systematically and kept under constant control. Monitoring techniques include—

(a) periodic audits of management systems;

(b) regular inspections of plant, equipment and work processes;

(c) ongoing monitoring of condition and usage of noise control equipment and personal protective equipment; and

(d) re-assessments of noise on a regular basis and following any changes that could significantly alter noise exposure.

These techniques provide the information required to ensure that noise control and hearing protector programs are competently implemented, reviewed and, as time and resources permit, improved. For these purposes, checklists to assist in the evaluation of specific program elements are included in the appropriate sections of previous Parts.

If monitoring and evaluation are carried out systematically and any problems disclosed are promptly dealt with, there can be a high degree of confidence that the programs will be effective in minimizing occupational noise-induced hearing loss. However, some organizations make a final outcome evaluation measure by providing noise-exposed employees with regular hearing tests, the results of which are examined for any signs of developing hearing impairment. As noted in NOHSC:2009, *National Code of Practice for Noise Management and Protection of Hearing at Work*, such testing is not itself a protective mechanism and is relevant only in the context of a comprehensive noise management program.

Regulatory requirements are also relevant in some areas. Some Australian regulations have a general requirement for medical surveillance of people occupationally exposed to hazards, a requirement which has been interpreted to mean that audiometric surveillance is required for people occupationally exposed to noise. Some jurisdictions have specific requirements for provision of regular hearing tests for people whose noise exposure is such that they need to rely on hearing protectors for protection.

Pure tone audiometric testing of threshold sensitivity is the method of auditory assessment usually used in noise management programs. However, there is evidence which suggests that inner ear damage caused by noise exposure accumulates prior to the onset of threshold impairment. Objective assessment of noise-induced damage to the outer hair cells of the inner ear can be made by measurement of sounds, called otoacoustic emissions (OAEs), emitted from the inner ear after stimulation by external sound and which can be measured in the ear canal (see Appendix H). OAEs can contribute to noise management programs by identifying hidden inner ear damage and indicating the need for strategies for delaying the onset of hearing impairment.

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