AS 3817:1998
ISO 10843:1997
ISO 10843:1997/Cor.1:2009
(Incorporating Amendment No. 1)

AS 3817:1998

Australian STANDARD

Acoustics—Methods for the description and physical measurement of single impulses or series of impulses

STANDARDS Australia

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- Acoustics consulting interests, New Zealand
- AirServices, Australia
- Australian Acoustical Society
- Australian and New Zealand Environment and Conservation Council
- Australian Hearing Services
- AUSTROADS
- Bureau of Steel Manufacturers of Australia
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- Department of Defence, Australia
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- The Association of Consulting Engineers, Australia
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- University of Sydney

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AS 3817:1998
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Australian Standard®

Acoustics—Methods for the description and physical measurement of single impulses or series of impulses

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PREFACE

A1 This Standard is identical with, and has been reproduced from, ISO 10843:1997, *Methods for the description and physical measurement of single impulses or series of impulses* and its Corrigendum 1 (2009) which has been added at the end of the source text.

Amendment No. 1 to this Standard was prepared by the Australian members of the Joint Standards Australia/Standards New Zealand Committee EV-010, Acoustics Community Noise. As a consequence of Amendment No. 1, which is published as an Australian-only amendment, this Standard will be redesignated from AS/NZS 3817 to AS 3817.

This Standard incorporates Amendment No. 1 (August 2019). 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.

The objective of this Standard is to describe and specify the physical measurement of single impulsive sound or short series of impulsive sounds.

The term 'informative' has been used in this Standard to define the application of the annex to which it applies. An 'informative' annex is only for information and guidance.

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

(a) Its number appears on the cover and title page while the International Standard number appears only on the cover.

(b) In the source text, 'this International Standard' should read 'this Australian/New Zealand Standard'.

(c) A full point substitutes for a comma when referring to a decimal marker.

References to international Standards should be replaced by equivalent Australian, New Zealand or Australian/New Zealand Standards, as follows:

Reference to International Standard		*Australian, New Zealand or Australian/New Zealand Standard*	
IEC		AS	
50-801	International electrotechnical vocabulary—Chapter 801: Acoustics and electroacoustics	—	
651	Sound level meters, and its Amendment 1:1993	1259.1	Acoustics—Sound level meters—Non-integrating
804	Integrating-averaging sound level meters, and its Amendment 1:1989 and Amendment 2:1993	1259.2	Acoustics—Sound level meters—Integrating—Averaging
942	Sound calibrators	—	
		AS/NZS	
1260	Electroacoustics—Octave-band and fractional-octave-band filters	4476	Acoustics—Octave-band and fractional-octave-band filters

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Introduction

0.1 Purpose

The purpose of this International Standard is to describe and specify the physical measurement of single impulsive sounds or short series of impulsive sounds. The actual measurement performed will change according to both the measurement situation and the physical quantities required. Detailed characterization of source emissions is beyond the scope of this standard.

0.2 Physical measurement alternatives

Physical measurement alternatives will change according to the purpose of the measurements and the measurement situation. First, measurements may be made of phase-sensitive quantities such as peak-level, rise-time, duration, or measurements may be made of time-integrated quantities such as frequency-filtered or frequency-weighted sound exposure level (e.g. A-weighted sound exposure level). Secondly, measurements may be made on a continuous sound source or a transient sound source. This International Standard deals only with transients (single impulsive sounds or short series of impulsive sounds); therefore time-integrated descriptors such as sound exposure or sound energy, rather than time-averaged descriptors, are applicable.

0.3 Measurement situation

Noise measurement situations will change according to the purpose of the measurement. There are three alternative pairs of measurement situations which may require the measurement of single impulsive sounds or series of impulsive sounds. First, measurements may be for workplace-related purposes, such as hearing conservation or employee efficiency, or measurements may be for community environmental purposes. Secondly, measurements may be indoors or outdoors. Thirdly, measurements may be for the purpose of gathering source-emission data, or of describing immission levels in the community. Other International Standards provide guidance for specific measurement situations. ISO 11200 should be used for measurements of emission sound pressure levels at the work station and at other specified positions; the ISO 3740 or ISO 9614 series should be used for determination of sound power levels of noise sources; the ISO 1996 series should be used for description and measurement of environmental sound.

AUSTRALIAN STANDARD

Acoustics—Methods for the description and physical measurement of single impulses or series of impulses

1 Scope

This International Standard describes preferred methods for the description and the physical measurement of single impulsive sounds or short series of impulsive sounds and for the presentation of the data. It does not provide methods for interpreting the potential effects of series of impulses of noise on hearing, community response or structures.

This International Standard applies to single impulsive sounds or short series of impulsive sounds such as those produced by explosions, artillery fire, bombing and similar activities, sonic booms, pistol and rifle fire, and cartridge-operated tools or machines.

Two different kinds of measurements are considered:

a) measurements of phase-sensitive parameters, such as peak sound pressure level and duration, that directly characterize the variation of sound pressure with time; and

b) measurements of time-integrated quantities such as frequency weighted sound exposure level or sound energy level.

2 Normative references

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

IEC 50-801:1994, *International electrotechnical vocabulary — Chapter 801: Acoustics and electroacoustics*

IEC 651:1979, *Sound level meters*, and its Amendment 1:1993.

IEC 804:1985, *Integrating-averaging sound level meters*, and its Amendment 1:1989 and Amendment 2:1993.

IEC 942:1988, *Sound calibrators.*

IEC 1260:1995, *Electroacoustics — Octave-band and fractional-octave-band filters.*

