AS 1055:2018

Acoustics—Description and measurement of environmental noise

This Australian Standard® was prepared by Committee EV-010, Acoustics Community Noise.
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The following are represented on Committee EV-010:

- Association of Australian Acoustical Consultants
- Australian Acoustical Society
- Austroads
- Bureau of Steel Manufacturers of Australia
- Department of Defence (Australian Government)
- Engineers Australia
- National Acoustic Laboratories
- University of Sydney

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Australian Standard®

Acoustics—Description and measurement of environmental noise

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PREFACE

This Standard was prepared by the Australian Committee EV-010, Acoustics, Community Noise, to supersede AS 1055.1—1997, *Acoustics—Description and measurement of environmental noise*, Part 1: *General procedures*, AS 1055.2—1997, *Acoustics—Description and measurement of environmental noise*, Part 2: *Application to specific situations*, and AS 1055.3—1997, Acoustics—*Description and measurement of environmental noise*, Part 3: *Acquisition of data pertinent to land use*.

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 previous three-part AS 1055 series has been consolidated into this single document.

The objective of this Standard is for use in the evaluation of environmental noise in order to meet the needs of public bodies and persons interested in its management. It applies primarily to noise emitted from industrial, commercial and residential premises, and is intended for use in the evaluation of existing problems, as well as for planning purposes. It may be used for noise that includes impulsive components, but it is not suitable for noise that consists solely of discrete impulses (e.g. shooting, blasting).

The objective of this revision is to reflect the technological advances in acoustical measurement techniques since the previous revision of 1997 and different approaches taken by regulatory authorities in Australia to the measurement and assessment of environmental noise.

This Standard is not a regulatory document and users should identify the relevant requirements of regulatory authorities and the details of specific requirements laid down in each State or Territory.

It has been assumed that the user of this Standard is adequately trained in the science of acoustics and thoroughly experienced in noise measurement and assessment, but to familiarize the user with some of the special terms introduced in this Standard, an example of its application is included (see Appendix A).

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

IMPORTANT COPYRIGHT INFORMATION

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FOREWORD

Although a sound level meter set on A-weighting and 'F' response may be used to make a quick assessment of a possible community noise problem, more sophisticated instrumentation is available and should be used for the purposes of this Standard. A choice may be made between the time average A-weighted sound pressure level ($L_{Aeq,t}$) or other descriptor(s) such as the percent exceedance A-weighted sound pressure level ($L_{A90,T}$) as the basic quantity, or other quantities as specified by the relevant regulatory authority.

The methods and procedures described in this Standard are intended to be applicable to sounds from all sources, individually and in combination, which contribute to the total noise at a site. For certain types of sources, more detailed procedures may be used (for example, the AS/NZS 1269 series, *Occupational noise management*, for situations where the noise may cause hearing impairment). Specific measurements for road traffic, aircraft and ship noise are covered in AS 2702, *Acoustics—Methods for the measurement of road traffic noise*, AS 2021, *Acoustics—Aircraft noise intrusion—Building siting and construction* and AS 1949, *Acoustics—Measurement of airborne noise emitted by vessels in waterways, ports and harbours* and AS 3671, *Acoustics—Road traffic noise intrusion—Building siting and construction* respectively.

This Standard aims at providing authorities with material for the description of noise in community environments. Based on the principles described in this Standard, acceptable limits of noise may be specified and conformance with these limits can be assessed.

STANDARDS AUSTRALIA

Australian Standard
Acoustics—Description and measurement of environmental noise

1 SCOPE

This Standard sets out general procedures for the description and measurement of environmental noise, including repetitive impulsive noise. It defines the basic quantities to be used for the description of noise in community environments and provides basic procedures for the determination of these quantities.

The Standard applies primarily to noise emitted from industrial, commercial and residential premises. It excludes the setting of environmental noise criteria. Such levels are set by regulations or organizational policy.

This Standard does not apply to the following:

(a) The measurement or assessment of in-transit air, rail or water transportation or road transportation on public roads (which may be present in the ambient noise occurring at a location).

(b) Noise that consists solely of discrete impulses such as those encountered in shooting and blasting.

(c) Noise from wind farms.

In this Standard, all sound pressure level descriptors are A-weighted, unless stated otherwise.

NOTE: Guidelines for the application of this Standard are given in Appendix A.

The structure of this Standard is as follows:

(i) Definitions and symbols.

(ii) Instrumentation.

(iii) Measurements—

  (A) general locations, times, conditions and methods for general measurements;

  (B) methods for assessing specific environmental noise situations;

  (C) methods for setting objectives and specifications; and

  (D) methods for assessing conformance to objectives and specifications.

(iv) Reporting and information to be recorded.

(v) Appendices.

2 NORMATIVE DOCUMENTS

NOTE: Documents referenced for informative purposes are listed in the Bibliography.

The following are the normative documents referred to in this Standard:

AS IEC
61672 Electroacoustics—Sound level meters
61672.1 Part 1: Specifications

IEC
60942 Acoustics—Sound calibrators