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Australian Standard 1055.2—1984

ACOUSTICS—DESCRIPTION AND MEASUREMENT OF ENVIRONMENTAL NOISE
Part 2—APPLICATION TO SPECIFIC Ssituations

STANDARDS ASSOCIATION OF AUSTRALIA
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The following interests are represented on Committee AK/5:

Australian Acoustical Society

Australian Institute of Health Surveyors

Australian Institute of Petroleum Limited

Australian and New Zealand Pulp Industry Technical Association

Australian Road Research Board

Bureau of Steel Manufacturers of Australia

Confederation of Australian Industry

Council of the City of Sydney

CSIRO, Division of Building Research

CSIRO, Division of Mathematics and Statistics

Department of Defence

Department of Environment and Planning, S.A.

Department of Health, N.S.W.

Department of Public Works, W.A.

Electricity Supply Association of Australia

Environment Protection Authority of Victoria

Experimental Building Station

Metal Trade Industry Association of Australia

National Acoustic Laboratories

National Association of Australian State Road Authorities

Royal Australian Institute of Architects

Royal Australian Planning Institute

Society of Automotive Engineers, Australasia

State Pollution Control Commission, N.S.W.

University of Adelaide

Victoria Police

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AUSTRALIAN STANDARD

ACOUSTICS—DESCRIPTION AND MEASUREMENT OF ENVIRONMENTAL NOISE

Part 2 APPLICATION TO SPECIFIC SITUATIONS

AS 1055.2—1984

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PREFACE

This standard was prepared by the Association's Committee on Community Noise, to supersede AS 1055—1978, Code of Practice for Noise Assessment in Residential Areas.

This standard is a part of a series, the other parts of the series being as follows:

Part 1—General Procedures

Part 3—Acquisition of Data Pertinent to Land Use

Part 1 is based on ISO 1996/1, Acoustics—Description and Measurement of Environmental Noise, Part 1—Basic Quantities and Procedures. This Part 2 and Part 3 are based respectively on ISO 1996/3 and ISO 1996/2 which are in course of publication.

This standard gives guidelines for setting noise limits and describes procedures for checking compliance with such limits and for investigations of specific environmental noise situations. It is assumed that noise limits are established by relevant authorities according to these guidelines and may be embodied in Noise Limit Requirement Documents to which references are made.

This standard is not a regulatory document and users should ascertain, from the relevant regulatory authority, details of specific requirements laid down in each State or Territory.

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Australian Standard
for
ACOUSTICS—DESCRIPTION AND MEASUREMENT OF ENVIRONMENTAL NOISE

PART 2—APPLICATION TO SPECIFIC SITUATIONS

1 SCOPE. This standard—

(a) describes data acquisition methods that—

(i) enable the investigation of specific environmental noise situations; and

(ii) enable specific acoustic situations to be checked for compliance with a specific noise limit; and

(b) gives guidelines for the specification of noise limits.

This standard does not specify noise limits.

2 APPLICATION. This standard is to be read in conjunction with the definitions and procedures set out in AS 1055, Part 1.

3 REFERENCED DOCUMENTS. The following standards are referred to in this standard:

AS 1055 Acoustics—Description and Measurement of Environmental Noise
Part 1—General Procedures
Part 3—Acquisition of Data Pertinent to Land Use

AS 1217 Acoustics—Determination of Sound Power levels of Noise Sources
Part 5—Engineering Methods for Free-field Conditions Over a Reflecting Plane*

AS 2680 Acoustics—Performance Requirements for Tape Recording Equipment for Use in Acoustical Measurement Systems.

4 INVESTIGATION OF SPECIFIC ENVIRONMENTAL NOISE SITUATIONS.

4.1 General. The purpose of specific noise investigation is to obtain acoustic data upon which an assessment of the acceptability of noise can be made. The descriptor(s) to be used depend(s) on the choice made by the relevant Regulatory Authority. A choice shall be made between—

(a) adjusted average maximum A-weighted sound pressure level, $L_{Amax\ adj,T}$, and background A-weighted sound pressure level, $L_{Abg,T}$; and

NOTE: Appendix A describes a method of estimating the severity of noise annoyance that may exist at specific residential locations using these descriptors. This method is not suitable for all types of noise and reference should be made to the requirements of the relevant regulatory authority when determining the significance or severity of noise annoyance.

(b) the rating level, $L_{Ar,T}$.

NOTE: This is consistent with descriptors used in AS 1055, Parts 1 and 3. In order to estimate the severity of noise annoyance using this descriptor, it is necessary to compare the rating level with a noise limit as specified by the relevant Regulatory Authority.

(c) The percentile A-weighted sound pressure level $L_{A\%,T}$.

4.2 Measurements.

4.2.1 *General.* Wherever possible, the noise should be measured at the relevant time and place. Where the chosen descriptors are the adjusted average maximum A-weighted sound pressure level, $L_{A\ max\ adj,T}$, and the background sound pressure level, $L_{Abg,T}$, the measurements shall be made in accordance with Clause 4.2.2. Where the chosen descriptor is $L_{Ar,T}$, the measurements shall be made in accordance with Clause 4.2.3. Where the descriptors are the percentile A-weighted sound pressure level the measurement shall be made in accordance with Clause 4.2.4.

NOTES:

1. Where appropriate, the ambient sound, with and without the noise investigated, should be recorded on a magnetic tape recorder complying with AS 2680, Type A for subsequent analysis. The instrument should be a Type A equipment complying with AS 2680.
2. Additionally, other types of measurement may be desirable depending on the situation to be investigated or may be specified by the relevant regulatory authority. Such measurements may include spectrum analysis of the ambient sound, with and without the noise being investigated (octave band, one-third octave band or narrow-band analysis, as necessary), where the noise has characteristics such as narrow-band components or low-frequency components not adequately reflected in the A-weighted level.

4.2.2 *Measurement of adjusted maximum A-weighted sound pressure level, $L_{Amax\ adj,\ T}$, and background A-weighted sound pressure level, $L_{Abg,T}$.* The noise shall be measured at the relevant time and place. The level of the total ambient sound (including the noise being investigated) shall be measured to determine $L_{Amax,\ T}$. The level of background sound $L_{Abg,T}$ shall be measured in the absence of the noise being investigated.

In cases where the investigation concerns noises heard inside a building, measurements shall be made inside the building.

NOTES:

1. If it is not possible to measure $L_{Abg,T}$ in the absence of the noise that is being investigated, at the relevant place and time, it should be measured at a similar location. When it is not possible to measure $L_{Abg,\ T}$ at a similar location it may be estimated in accordance with Appendix B. A similar location is one which, for example, by reason of traffic flow or general industrial activity, would be expected to have a similar background level as the site under consideration.
2. Where measurements are made inside a building, the importance of transmission through windows, doors, ventilation ducts, etc should be investigated. Wherever possible, measurements should also be made outside the building.
3. Where the adjusted maximum A-weighted sound pressure level is obtained by use of adjustments for tonal and/or impulsive character of the noise, the applicability of such adjustments in the specific situation should be investigated.
4. Any extraneous noise, e.g. passing traffic, insects, dogs barking, should be excluded from the data reported.

*In course of preparation.