

AS 3781—1990
ISO 4871—1984

Australian Standard[®]

**Acoustics—Noise labelling of
machinery and equipment**

This Australian Standard was prepared by Committee AV/6, Acoustics, Machinery Noise. It was approved on behalf of the Council of Standards Australia on 26 April 1990 and published on 17 September 1990.

The following interests are represented on Committee AV/6:

Australian and New Zealand Environment Council
Australian Coal Association
Australian Compressed Air and Mining Equipment Institute
Australian Federation of Construction Contractors
Confederation of Australian Industry
Construction Equipment Importers and Manufacturers of Australia
Council of the City of Sydney
Department of Industrial Relations and Employment, N.S.W.
Department of Labour, S.A.
Master Builders Construction and Housing Association Australia
Metal Trades Industry Association of Australia
Monash University
National Association of Australian State Road Authorities
National Farmers Federation
Outdoor Power Equipment Association
Royal Institute of Naval Architects
Tractor and Machinery Association of Australia
The University of Melbourne

Review of Australian Standards. To keep abreast of progress in industry, Australian Standards are subject to periodic review and are kept up to date by the issue of amendments or new editions as necessary. It is important therefore that Standards users ensure that they are in possession of the latest edition, and any amendments thereto.

Full details of all Australian Standards and related publications will be found in the Standards Australia Catalogue of Publications; this information is supplemented each month by the magazine 'The Australian Standard', which subscribing members receive, and which gives details of new publications, new editions and amendments, and of withdrawn Standards.

Suggestions for improvements to Australian Standards, addressed to the head office of Standards Australia, are welcomed. Notification of any inaccuracy or ambiguity found in an Australian Standard should be made without delay in order that the matter may be investigated and appropriate action taken.

AS 3781—1990

Australian Standard®

**Acoustics—Noise labelling of
machinery and equipment**

First published as AS 3781—1990.

PUBLISHED BY STANDARDS AUSTRALIA
(STANDARDS ASSOCIATION OF AUSTRALIA)
1 THE CRESCENT, HOMEBUSH, NSW 2140

ISBN 0 7262 6329 X

PREFACE

This Standard was prepared by the Standards Australia Committee on Acoustics, Machinery Noise. It is identical with and has been reproduced from ISO 4871—1984, *Acoustics—Noise labelling of machinery and equipment*.

For the purpose of this Australian Standard, the ISO text should be modified as follows:

References: The references to International Standards should be replaced by references to Australian Standards.

<i>Reference to International Standards</i>	<i>Australian Standard</i>
ISO	AS
3740 Acoustics—Determination of sound power levels of noise sources—Guidelines for the use of basic standards and for the preparation of noise test codes	1217 Acoustics—Determination of sound power levels of noise sources Part 1: Guidelines for the use of basic Standards for the preparation of noise test codes
3741 Acoustics—Determination of sound power levels of noise sources—Precision methods for broad-band sources in reverberation rooms	1217.2 Part 2: Precision methods for broad-band sources in reverberation rooms
3742 Acoustics—Determination of sound power levels of noise sources—Precision methods for discrete-frequency and narrow-band sources in reverberation rooms	1217.3 Part 3: Precision methods for discrete-frequency and narrow-band sources in reverberation rooms
3743 Acoustics—Determination of sound power levels of noise sources—Engineering methods for special reverberation test rooms	1217.4 Part 4: Engineering methods for special reverberation test rooms
3744 Acoustics—Determination of sound power levels of noise sources—Engineering methods for free-field conditions over a reflecting plane	1217.5 Part 5: Engineering methods for free-field conditions over a reflecting plane
3745 Acoustics—Determination of sound power levels of noise sources—Precision methods for anechoic and semi-anechoic rooms	1217.6 Part 6: Precision methods for anechoic and semi-anechoic rooms
3746 Acoustics—Determination of sound power levels of noise sources—Survey method	1217.7 Part 7: Survey method
7574 Acoustics—Statistical methods for determining and verifying stated noise emission values of machinery and equipment	3782 Acoustics—Statistical methods for determining and verifying stated noise emission values of machinery and equipment
7574/1 Part 1: General considerations and definitions	3782.1 Part 1: General considerations and definitions
7574/2 Part 2: Methods for stated values for individual machines	3782.2 Part 2: Methods for stated values for individual machines
7574/3 Part 3: Simple (transition) method for stated values for batches of machines	3782.3 Part 3: Simple (transition) method for stated values for batches of machines
7574/4 Part 4: Methods for stated values for batches of machines	3782.4 Part 4: Methods for stated values for batches of machines

CONTENTS

	<i>Page</i>
0 INTRODUCTION	4
1 SCOPE AND FIELD OF APPLICATION	4
2 REFERENCES	5
3 DEFINITIONS	5
4 DETERMINATION OF THE LABELLED VALUE	5
5 LABELLING	6
ANNEX GUIDELINES FOR THE PREPARATION OF NOISE LABELLING CORES FOR A SPECIFIC FAMILY OF MACHINES	7

© Copyright — STANDARDS AUSTRALIA

Users of Standards are reminded that copyright subsists in all Standards Australia publications and software. Except where the Copyright Act allows and except where provided for below no publications or software produced by Standards Australia may be reproduced, stored in a retrieval system in any form or transmitted by any means without prior permission in writing from Standards Australia. Permission may be conditional on an appropriate royalty payment. Requests for permission and information on commercial software royalties should be directed to the head office of Standards Australia.

Standards Australia will permit up to 10 percent of the technical content pages of a Standard to be copied for use exclusively in-house by purchasers of the Standard without payment of a royalty or advice to Standards Australia.

Standards Australia will also permit the inclusion of its copyright material in computer software programs for no royalty payment provided such programs are used exclusively in-house by the creators of the programs.

Care should be taken to ensure that material used is from the current edition of the Standard and that it is updated whenever the Standard is amended or revised. The number and date of the Standard should therefore be clearly identified.

The use of material in print form or in computer software programs to be used commercially, with or without payment, or in commercial contracts is subject to the payment of a royalty. This policy may be varied by Standards Australia at any time.

Acoustics—Noise labelling of machinery and equipment

0 Introduction

In order to cope with the problems of noise from machines and its disturbance of people, useful information on noise emission of machines is needed by users, authorities, planners, etc.

Legal or voluntary codes for noise reduction purposes make use of three principally different approaches. The first is to specify maximum immission (exposure) limits at the work place and for residential, industrial and traffic areas; the second is to specify the maximum emission (output) limits from machines; the third is to give information on the noise emission of a machine through a labelled value. There exists a need to coordinate at least the general procedures on a world-wide basis in order to avoid the development of technical barriers to trade.

The following conclusions have been reached:

a) Consumers, purchasers, authorities and manufacturers need a uniform system for characterizing the noise emission and for labelling the machinery or equipment with the acoustical characteristics of a product giving the following:

— information on the noise output from a product for the purpose of noise regulations, acoustical planning and comparison of different noise sources of the same kind or different kinds;

— uniform ways of presenting noise performance to prevent barriers to trade resulting from differences in measurement methods, limit values and designations of noise, thus providing a clear, universal guideline for the choice between noise characteristics of a product.

NOTE— Information on the noise output from a product in relation to the noise output from other similar products having the same performance, output or function, that is, a relative classification, which may facilitate the choice of noise performance in relation to other characteristics is difficult to establish and implies a knowledge of the level of the noise of a whole family of machines at a given time. Those levels also change with technical progress. Therefore, a relative classification is not dealt with in this International Standard, although provisions are given in the annex, so that the information required is provided for by the relevant labelling code.

b) The purpose of this International Standard is to establish requirements for the use of measured noise emission values for the purposes of noise labelling machines or equipment.

In order to avoid confusion between values for sound pressure level (which are highly dependent on the distance of measurement and on the environment)

and values for sound power level determined under specified mounting and operating conditions, levels in terms of the emitted sound power are basically used for labelling purposes in this International Standard, because sound power levels are independent of the measurement distance used.

Use of sound power for labelling purposes permits comparison of noise emissions between machines or equipment of different types. Information as to the absolute noise emissions of equipment or machines facilitates the preparation of noise regulations and legislation.

c) It is the responsibility

— of other appropriate authorities or committees to decide which noise limits they consider acceptable;

— of ISO and IEC, on the basis of this International Standard, to establish their specific labelling documents for specific families of machines or equipment under their responsibility.

NOTES

1 Sound pressure levels at any specified position near the machine which depend essentially on the installation of the machine, its use, the environment, the directivity of noise radiation and the measurement distance, are excluded for the sake of a uniform method for labelling.

In special cases, for example where the operator's positions are well-defined, such measurements as described in documents related to the specific use of a machine (see ISO 6081) may also be of interest.

2 For assessment purposes, the value of the sound power level may be modified by corrective values for temporal or spectral characteristics. Since such corrections will generally be similar for a family of machines, corrections for assessment are not dealt with in this International Standard for the sake of simplicity.

1 Scope and field of application

This International Standard

— prescribes a manner in which the noise emission of machinery and equipment shall be expressed for labelling purposes;

— prescribes the minimum information to be given in a label attached to the machine or in commercial or technical documents supplied to consumers by the manufacturer.

This International Standard applies to machinery and equipment which is essentially stationary in nature. Traffic vehicles are excluded.