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Australian Standard®

Acoustics—Statistical methods for determining and verifying stated noise emission values of machinery and equipment

Part 4: Methods for stated values for batches of machines

[ISO title: Acoustics—Statistical methods for determining and verifying stated noise emission values of machinery and equipment Part 4: Methods for stated values for batches of machines]

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 Australi
Council of the City of Sydney
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Metal Trades Industry Association of Australi
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National Association of Australian State Road Authorities
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Royal Institute of Naval Architects
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Part 4: Methods for stated values for batches of machines

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PREFACE

This Standard was prepared by the Standards Australia Committee on Acoustics, Machinery Noise. It is identical with and has been reproduced from ISO 7574/4—1985, *Acoustics—Statistical methods for determining and verifying stated noise emission values of machinery and equipment*—Part 4: *Methods for stating values for batches of machines.*

This Standard is one of the series which deals with statistical methods for determining and verifying noise emission values of machines and equipment, the series being arranged as follows:

Acoustics—Statistical methods for determining and verifying stated noise emission values of machinery and equipment.

Part 1: *General considerations and definitions*

Part 2: *Methods for stated values for individual machines*

Part 3: *Simple (transition) method for stated values for batches of machines*

Part 4: *Methods for stated values for batches of machines* (this Standard).

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.

Reference to International Standard		*Australian Standard*	
ISO		AS	
4871	Acoustics—Noise labelling of machinery and equipment	3781	Acoustics—Noise labelling of machinery and equipment
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

CONTENTS

Acoustics—Statistical methods for determining and verifying stated noise emission values of machinery and equipment

Part 4: Methods for stated values for batches of machines

0 Introduction

A general introduction to the four-part series of ISO 7574 is given in ISO 7574/1.

For the purposes of this part of ISO 7574, the term "labelled value" stands for all kinds of stated value (e.g. information on a label, the upper noise limit set by an authority, the agreed contract value) for which the methods may be applied.

This part of ISO 7574 contains statistical sampling methods for checking the stated noise emission values for batches (lots) of machines. The labelled value for all machines in a batch is checked by sampling procedures. A reference standard deviation is required when testing the compliance of a batch of a specific family of machines. In addition, information on the type of sampling to be used (single, double or sequential) and the sample size is required. The procedures specified in this part of ISO 7574 assume that the noise emission values of a batch (lot) of machines will follow a normal distribution. The statistical parameters upon which this part of ISO 7574 is based assume that there is a 95 % probability of acceptance if no more than 6,5 % of the noise emission values in a batch exceed the labelled value. Information is included to assist the labeller in determining a labelled value based on these statistical parameters.

The methods given in this part of ISO 7574 ensure that a batch (lot) of machines labelled in accordance with the specifications for the verification procedure have a predetermined probability of acceptance.

1 Scope and field of application

This part of ISO 7574 provides guidelines for determining the labelled value, L_c, by the labeller and specifies statistical sampling procedures for verifying compliance of the noise emissions of a batch (lot) of machinery and equipment with its labelled value.

This part of ISO 7574 is intended to assist those parties responsible for drawing up specific labelling codes for specific families of machines. It is also intended to be of use to labellers who want their batches of machines to conform with verification procedures that are in accordance with the specifications given in the specific labelling codes based on clause 7.

This part of ISO 7574 does not deal with the consequences that ensue if the stated value is not confirmed as verified for a batch (lot) of machines.

2 References

ISO 3951, *Sampling procedures and charts for inspection by variables for percent defective.*

ISO 4871, *Acoustics—Noise labelling of machinery and equipment.*

ISO 7574/1, *Acoustics—Statistical methods for determining and verifying stated noise emission values of machinery and equipment—Part 1: General considerations and definitions.*

3 Definitions

For the purposes of this part of ISO 7574, the definitions given in ISO 7574/1 apply.

4 General

For a batch of machines, the noise emission values will cover a certain range due to the variability between the machines (relevant measure: standard deviation of production, σ_p) and due to measurement errors occurring under reproducibility conditions (relevant measure: standard deviation of reproducibility σ_R — see 3.17 in ISO 7574/1). The measure for the overall variability is the total standard deviation σ_t.

The aim of labelling a batch of machines is to indicate as labelled value, L_c, a limit below which a specified large proportion of the noise emission values of the batch shall lie. L_c is expressed as an integer in decibels.