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AMERICAN NATIONAL STANDARD

**Statistical Methods for Determining and
Verifying Stated Noise Emission Values of
Machinery and Equipment**

Secretariat:

Acoustical Society of America

Approved on 24 May 1985:

American National Standards Institute, Inc.

Abstract

This standard defines the preferred methods for determining and verifying noise emission values for machinery and equipment which are stated in product literature.

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AMERICAN NATIONAL STANDARD
Statistical Methods for Determining and Verifying Stated
Noise Emission Values of Machinery and Equipment

ABSTRACT

This standard defines the preferred methods for determining and verifying noise emission values for machinery and equipment which are stated in product literature or labeled by other means.

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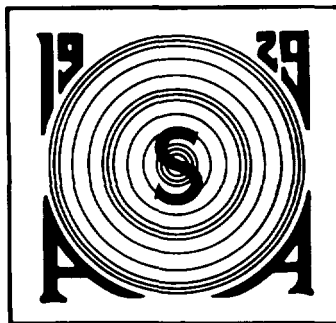
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These standards are developed as a public service to provide standards useful to the public, industry, and consumers, and to Federal, State, and local governments.

This standard was approved by the American National Standards Institute as ANSI S12.3-1985 on 24 May 1985.

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FOREWORD

[This Foreword is not part of American National Standard Statistical Methods for Determining and Verifying Stated Noise Emission Values of Machinery and Equipment, S12.3-1985 (ASA Catalog No. 57-1985).]

This American National Standard describes the preferred methods for determining and verifying noise emission values for machinery and equipment which are stated in product literature or labeled by other means. The methods of this American National Standard are consistent with ISO 7574 for Acoustics—Statistical methods for determining and verifying stated noise emission values of machinery and equipment.

This standard was developed using the American National Standards Institute (ANSI) Accredited Standards Committee Procedure under the Secretariat of the Acoustical Society of America.

Accredited Standards Committee S12, under whose jurisdiction this standard was developed, has the following scope:

Standards, specifications, and terminology in the field of acoustical noise pertaining to methods of measurement, evaluation, and control; including biological safety, tolerance and comfort, and physical acoustics as related to environmental and occupational noise.

At the time this standard was submitted to Standards Committee S12 for approval, the membership was as follows:

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Suggestions for improvement of this standard will be welcomed. They should be sent to the Standards Secretariat, Acoustical Society of America, 335 East 45th Street, New York, NY 10017.

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American National Standard Statistical Methods for Determining and Verifying Stated Noise Emission Values of Machinery and Equipment

0 INTRODUCTION

The object of noise emission labeling is to indicate a limit below which the noise emission value of an individual machine and/or a specified large proportion of the noise emission values of a batch of machines lie.

The principal purposes of this standard are to prescribe methods for verifying labeled noise emission values and to provide information to the labeler on the determination of noise emission values for product noise labeling purposes. The methods presented in the standard are consistent with the requirements of ISO 4871 and ISO 7574.

This standard considers the term "label" to include all means for providing information on the noise emission values to potential users of the equipment; this includes labels, brochures, advertisements, commercial literature, etc.

The methods described in this standard may also be applied to values stated for other purposes, e.g., to the upper noise emission limit set by an authority for a specific family of machines.

NOTE: Although this standard is drafted mainly in terms of A-weighted sound power level as a noise emission quantity, it is equally applicable to other single-number quantities.

This standard contains three methods:

I. Method for determining and verifying the noise emissions of machines with individually labeled values (Sec. 6).

II. Method for determining and verifying labeled values for batches of machines (Sec. 7).

III. Simple (transition) method for determining and verifying labeled values for batches of machines (Sec. 8).

1 SCOPE

This standard describes methods for determining and verifying labeled values for the noise emitted by machinery and equipment. Two types of labeling are considered in this standard: machines labeled with individual values and machines labeled with the same

value for the batch. For economical reasons, the labeled value for all machines of a batch of machines may be checked by sampling procedures.

This standard does not deal with the consequences to be drawn if the labeled value is not verified for the batch of machines or for the single machine.

2 PURPOSE

The principal purposes of this standard are to prescribe methods for verifying labeled noise emission values and to provide information to the labeler on the determination of noise emission values for product noise labeling purposes.

3 FIELD OF APPLICATION

This standard applies to machines produced in very small quantities as well as to machines produced by mass production methods. This standard applies to families of machines or equipment for which special measurement test codes for the determination of noise emission quantities are prepared. This standard requires that the labeled value be determined using the same measurement test code as that specified for verification. If no special test code for a particular family exists, the basic standards in the ANSI S1.31–S1.35 series may be appropriate.

NOTE: This does not preclude the use of other standards which may form the basis of special measurement test codes.

Section 6 contains methods for determining and verifying the labeled noise emission values which apply to machines labeled with individual values.

Section 7 contains statistical sampling methods for verifying the labeled noise emission values which apply to batches of machines. The labeled value for all machines of a batch is checked by sampling procedures. The use of Sec. 7 requires a labeling code for the family of machines. The labeling code must specify a reference standard deviation, the type of sampling to be used (single, double, or sequential), and the sample size required when testing the compliance of a batch of a specific family of machines. The procedures of Sec. 7 assume that the noise emission values of a batch of ma-