ASA/ANSI S12.15-1992
(Formerly ANSI S12.15-1992) (ASA 106-1992

Reaffirmed by ANSI June 19, 2020

AMERICAN NATIONAL STANDARD

For Acoustics – Portable Electric Power Tools, Stationary and Fixed Electric Power Tools, and Gardening Appliances – Measurement of Sound Emitted

Secretariat:

Acoustical Society of America

Approved on 7 December 1992:

American National Standards Institute, Inc.

Abstract

This American National Standard describes relatively simple test procedures for the measurement of airborne sound from portable electric power tools, stationary and fixed electric power tools, and gardening appliances. Methods are given for the measurement of sound pressure levels and for the calculation of sound power levels. These methods may be used by manufacturers to specify, in part, the sound produced by their products.

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ANSI/ASA S12.15-1992
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(ASA 106-1992)

Accredited Standards Committee S12, Noise

Standards Secretariat
Acoustical Society of America
35 Pinelawn Road, Suite 114 E
Melville, NY 11747-3177

The American National Standards Institute, Inc. (ANSI) is the national coordinator of voluntary standards development and the clearinghouse in the U.S.A. for information on national and international standards.

The Acoustical Society of America (ASA) is an organization of scientists and engineers formed in 1929 to increase and diffuse the knowledge of acoustics and to promote its practical applications.

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AMERICAN NATIONAL STANDARDS ON ACOUSTICS

The Acoustical Society of America provides the Secretariat for Accredited Standards Committees S1 on Acoustics, S2 on Mechanical Shock and Vibration, S3 on Bioacoustics, and S12 on Noise. These committees have wide representation from the technical community (manufacturers, consumers, and general-interest representatives). The standards are published by the Acoustical Society of America through the American Institute of Physics as American National Standards after approval by their respective standards committees and the American National Standards Institute.

These standards are developed and published 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 S12.15-1992 on 7 December 1992.

The American National Standards Institute, Inc. (ANSI) is the national coordinator of voluntary standards development and the clearing house in the U.S. for information on national and international standards.

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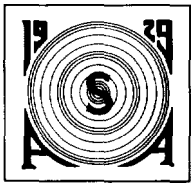

Published by the Acoustical Society of America through the American Institute of Physics

FOREWORD

[This Foreword is not a part of American National Standard For Acoustics—Portable Electric Power Tools, Stationary and Fixed Electric Power Tools, and Gardening Appliances—Measurement of Sound Emitted, ANSI S12.15-1992 (ASA Catalog No. 106-1992) (revision and redesignation of ANSI/PTI S10.1-1983).]

This American National Standard provides a methodology for the measurement of airborne sound emitted from portable electric power tools, stationary and fixed electric power tools, and gardening appliances. This standard also provides for the measurement of sound pressure levels and the calculation of sound power levels.

This standard, originally developed by the Power Tool Institute as ANSI/PTI S10.1-1983, now comes under the jurisdiction of Accredited Standards Committee S12, Noise. It has therefore been redesignated as ANSI S12.15-1992, the year of its approval by ANSI, with its editorially revised text.

This standard, ANSI S12.15-1992, covers the revision to remove ambiguities and clarify technical requirements to American National Standard for Acoustics—Portable Electric Power Tools, Stationary and Fixed Electric Power Tools, and Gardening Appliances—Measurement of Sound Emitted (ANSI/PTI S10.1-1983).

Accredited Standards Committee S12, Noise, 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 Accredited Standards Committee S12, Noise, for approval, the membership was as follows:

D. L. Johnson, *Chair*
L. H. Royster, *Vice-Chair*
A. Brenig, *Secretary*

Acoustical Society of America • D. L. Johnson, W. J. Galloway (*Alt*)
Acoustical Systems, Inc. • R. Goodwin, R. Seitz (*Alt*)
Air-Conditioning and Refrigeration Institute • S. Wang, J. C. Clukey (*Alt*)
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American Academy of Otolaryngology, Head and Neck Surgery, Inc. • R. F. Naunton, L. A. Michael (*Alt*)
American College of Occupational Medicine • P. F. Brownson, J. Sataloff (*Alt*)
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Compressed Air & Gas Institute (CAGI) • J. D. Addington
Computer and Business Equipment Manufacturers Association (CBEMA) • L. F. Luttrell
David Taylor Research Center • D. Vendittis
Edison Electric Institute • J. Fox, M. C. Mingoia (*Alt*)
Fastener Industry Noise Control Research Program • E. H. Toothman, J. C. McMurray (*Alt*)
Federal Aviation Administration • A. Konheim
Industrial Safety Equipment Association • A. M. Bovi, R. Campbell (*Alt-1*), F. E. Wilcher, Jr. (*Alt-2*)
Larson-Davis Laboratories • L. Davis

National Council of Acoustical Consultants • J. Erdreich, R. L. Richards (*Alt*)
National Electrical Manufacturers Association (NEMA) • D. Rawlings
National Institute of Standards and Technology • D. R. Flynn, D. J. Evans (*Alt*)
Power Tool Institute, Inc. • R. Callahan, D. Keller (*Alt*)
Scantek, Inc. • R. J. Peppin
U. S. Air Force • R. McKinley
U. S. Army Aeromedical Research Laboratory • B. Mozo, J. H. Patterson (*Alt*)
U. S. Army Construction Engineering Research Laboratory (USACERL) • P. D. Schomer, M. White (*Alt*)
U. S. Army Human Engineering Laboratory • G. R. Price, J. Kalb (*Alt*)
U. S. Department of the Army, Walter Reed Medical Center • R. M. Atack
U. S. Department of the Navy, Bureau of Medicine and Surgery • J. Page, L. Marshall (*Alt*)

Individual experts of Accredited Standards Committee S12, Noise, were:

P. K. Baade	R. S. Gales	W. W. Lang	H. E. von Gierke
R. G. Bartheld	W. J. Galloway	G. Maling	L. A. Wilber
R. W. Benson	R. M. Guernsey	A. H. Marsh	G. E. Winzer
L. Beranek	R. K. Hillquist	L. H. Royster	G. S. K. Wong
K. M. Eldred	D. L. Johnson	W. R. Thornton	R. W. Young

Working Group S12/WG30 on the revision of the Power Tool Institute (PTI) standard ANSI/PTI S10.1-1983, which assisted Standards Committee S12, Noise, in the development of this standard, had the following membership:

R. J. Callahan, *Chair*

D. Keller	W. Saffell
J. Myers	D. Peot
	R. Stavenhagen

Suggestions for improvement of this standard will be welcomed. They should be sent to **Accredited Standards Committee S12, Noise, in care of the ASA Standards Secretariat, 335 East 45th Street, New York, NY 10017-3483. Telephone (212) 661-9404.**

CONTENTS

American National Standard For Acoustics—Portable Electric Power Tools, Stationary and Fixed Electric Power Tools, and Gardening Appliances—Measurement of Sound Emitted

1 PURPOSE AND SCOPE

1.1 Purpose

The purpose of this standard is to provide test procedures for the measurement of airborne sound from portable electric power tools, stationary and fixed electric power tools, and gardening appliances.

This standard provides for the measurement of sound pressure levels and for the calculation of sound power levels.

1.2 Scope

1.2.1. This standard applies to portable electric power tools rated at or below 250 volts (V) for use in accordance with American National Standard National Electric Code, ANSI/NFPA 70-1990.

1.2.2. This standard also applies to stationary and fixed electric power tools rated at or below 600 V for use in accordance with ANSI/NFPA 70-1990.

1.2.3. This standard also applies to gardening appliances, such as cultivators, edger-trimmers, grass shears, etc., either battery-operated or cord-connected, and rated at or below 250 V for use in accordance with ANSI/NFPA 70-1990.

1.2.4. This standard does not cover machine tools, as defined in ANSI/NFPA 70-1990, nor does it cover tools, other than hand tools, intended primarily for production line use. This standard does not cover garage equipment, soldering irons or guns, painting equipment, floor-finishing machines, or vacuum cleaners. Lawnmowers, snow throwers, and chain saws are also excluded since they are covered in American National Standard Safety Specifications for Power Lawn Mowers, Lawn and Garden Tractors, and Lawn Tractors, ANSI B71.1-1980, American National Standard Safety Specifications for Snow Throwers, ANSI B71.3-1984, and the American National Standard Safety Standard for Portable Electric Tools, ANSI/UL 45-1990, respectively.

1.2.5. This standard does not apply to pneumatic and gasoline-powered tools.

1.2.6. This standard also provides a single-sheet certification form (see Appendix A).

2 RELATED STANDARDS

2.1 Related American National Standards

This standard is intended to be used in conjunction with the following American National Standards:

(1) American National Standard National Electric Code, ANSI/NFPA 70-1990.

(2) American National Standard Specification for Sound Level Meters, ANSI S1.4-1983 and ANSI S1.4A-1985.

(3) American National Standard Preferred Frequencies and Band Numbers for Acoustical Measurements, ANSI S1.6-1984 (R 1990).

(4) American National Standard Preferred Reference Quantities for Acoustical Levels, ANSI S1.8-1989.

(5) American National Standard Specification for Octave, Half-Octave, and Third-Octave Band Filter Sets, ANSI S1.11-1986.

(6) American National Standard Methods for the Measurement of Sound Pressure Levels, ANSI S1.13-1971 (R 1986).

(7) American National Standard Safety Standard for Portable Electric Tools, ANSI/UL 45-1990.

(8) American National Standard Safety Standard for Motor-Operated Appliances, ANSI/UL 73-1985.

(9) American National Standard Safety Standard for Stationary and Fixed Electric Tools, ANSI/UL 987-1990.

(10) American National Standard Safety Standard for Snow Throwers Safety Specifications, ANSI B71.3-1984.

2.2 Other Related Standards

This standard is also intended to be used in conjunction with the following standards:

(1) Octave, Half-Octave, and Third-Octave Band Filters Intended for the Analysis of Sounds and Vibrations, IEC 225 (1966).