ANSI/ASA S1.1-2013
(Revision of ANSI S1.1-1994)
Reaffirmed by ANSI May 28, 2020

AMERICAN NATIONAL STANDARD

Acoustical Terminology

ANSI/ASA S1.1-2013

Accredited Standards Committee S1, Acoustics

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

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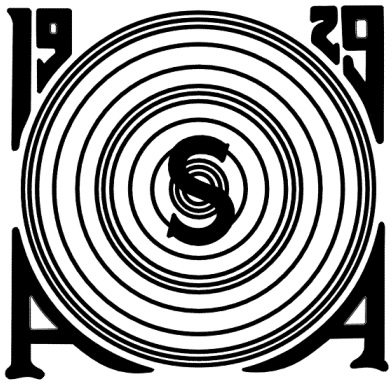

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AMERICAN NATIONAL STANDARD

Acoustical Terminology

Secretariat:

Acoustical Society of America

Approved on October 14, 2013 by:

American National Standards Institute, Inc.

Abstract
This standard provides definitions for a wide variety of terms, abbreviations, and letter symbols used in acoustics and electroacoustics. Terms of general use in all branches of acoustics are defined, as well as many terms of special use for architectural acoustics, acoustical instruments, mechanical vibration and shock, physiological and psychological acoustics, underwater sound, sonics and ultrasonics, and music.

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AMERICAN NATIONAL STANDARDS ON ACOUSTICS

The Acoustical Society of America (ASA) provides the Secretariat for Accredited Standards Committees S1 on Acoustics, S2 on Mechanical Vibration and Shock, S3 on Bioacoustics, S3/SC 1 on Animal Bioacoustics, and S12 on Noise. These committees have wide representation from the technical community (manufacturers, consumers, trade associations, organizations with a general interest, and government representatives). The standards are published by the Acoustical Society of America as American National Standards after approval by their respective Standards Committees and the American National Standards Institute (ANSI).

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.

Each of the Accredited Standards Committees (operating in accordance with procedures approved by ANSI) is responsible for developing, voting upon, and maintaining or revising its own Standards. The ASA Standards Secretariat administers Committee organization and activity and provides liaison between the Accredited Standards Committees and ANSI. After the Standards have been produced and adopted by the Accredited Standards Committees, and approved as American National Standards by ANSI, the ASA Standards Secretariat arranges for their publication and distribution.

An American National Standard implies a consensus of those substantially concerned with its scope and provisions. Consensus is established when, in the judgment of the ANSI Board of Standards Review, substantial agreement has been reached by directly and materially affected interests. Substantial agreement means much more than a simple majority, but not necessarily unanimity. Consensus requires that all views and objections be considered and that a concerted effort be made towards their resolution.

The use of an American National Standard is completely voluntary. Their existence does not in any respect preclude anyone, whether he or she has approved the Standards or not, from manufacturing, marketing, purchasing, or using products, processes, or procedures not conforming to the Standards.

NOTICE: This American National Standard may be revised or withdrawn at any time. The procedures of the American National Standards Institute require that action be taken periodically to reaffirm, revise, or withdraw this Standard.

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Foreword

[*This Foreword is for information only, and is not a part of the American National Standard* ANSI/ASA S1.1-2013 American National Standard Acoustical Terminology.]

This standard comprises a part of a group of definitions, standards, and specifications for use in acoustics. It was developed and approved by Accredited Standards Committee S1, Acoustics, under its approved operating procedures. Those procedures have been accredited by the American National Standards Institute (ANSI). The Scope of Accredited Standards Committee S1 is as follows:

> *Standards, specifications, methods of measurement and test, and terminology in the field of physical acoustics, including architectural acoustics, electroacoustics, sonics and ultrasonics, and underwater sound, but excluding those aspects which pertain to biological safety, tolerances, and comfort.*

This standard is a revision of ANSI S1.1-1994, which has been technically revised.

At the time this Standard was submitted to Accredited Standards Committee S1, Acoustics for approval, the membership was as follows:

P.J. Battenberg, *Chair*
R.J. Peppin, *Vice-Chair*

S.B. Blaeser, *Secretary*

Acoustical Society of America ..... A.H. Marsh
..... P.D. Schomer (Alt.)

Air-Conditioning, Heating and Refrigeration Institute ..... S. Lind
..... D. Abbate (Alt.)

American Industrial Hygiene Association ..... D. Driscoll
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Campanella Associates ..... A.J. Campanella

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ETS-Lindgren Acoustic Systems ..... D. Winker
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..... M.J. White (Alt.)

U.S. Army Research Laboratory, Human Research and Engineering Directorate ..... A. Scharine
..... T.R. Letowski (Alt.)

U.S. Department of Labor, Mine Safety and Health Administration ..... J.P. Seiler
..... J. Homer (Alt.)

Individual Experts of Accredited Standards Committee S1, Acoustics, were:

S.L. Ehrlich	W.W. Lang	J.P. Seiler
P. Hanes	A.H. Marsh	L. Wu
	P.D. Schomer	

Working Group S1/WG 27, Acoustical Terminology, which assisted Accredited Standards Committee S1, Acoustics, in the development of this standard, had the following membership.

J.S. Vipperman, Chair
C.R. Greene, Vice Chair

M.A. Ainslie	D.J Evans	T.R. Letowski
S. Brown	C. Everbach	A.H. Marsh
A.J. Campanella	T. Farabee	R.J. Peppin
D. Deutsch	W.J. Galloway	K. Wu
B.E. Douglas	W.M. Hartmann	J. Zalesak
	M. Korman	

The group would also like to recognize George Wong and Joseph Pope who provided input to the early drafts of the revision before passing away.

Suggestions for improvements of this standard will be welcomed. They should be sent to Accredited Standards Committee S1, Acoustics, in care of the Standards Secretariat of the Acoustical Society of America, 35 Pinelawn Road, Suite 114E, Melville, New York 11747-3177. Telephone: 631-390-0215; FAX: 631-390-0217; E-mail: asastds@aip.org.

American National Standard

Acoustical Terminology

1 Scope

This American National Standard provides definitions for terms used in acoustics and electroacoustics. Many terms apply to all branches of acoustics. A number of general terms from the fields of architectural acoustics, engineering acoustics, physical acoustics, physiological and psychological acoustics, sonics and ultrasonics, underwater sound, and music are also provided. Specialized terms relating to the field of vibration and shock and to the fields of psychoacoustics and bioacoustics are contained in Standards listed among the general references.

Definitions provided in this Standard are intended to be consistent with their counterparts in International Standards.

Terms defined in an earlier edition of this Standard for the field of recording and reproducing sound are not provided in this edition because they are more properly a subject for other Standards.

2 General

2.01 sound. (a) Oscillation in pressure, stress, particle displacement, particle velocity, etc., propagated in a medium with internal forces (e.g., elastic or viscous), or the superposition of such propagated oscillation. (b) Auditory sensation evoked by the oscillation described in (a).

NOTE 1 Not all sounds evoke an auditory sensation, e.g., ultrasound or infrasound. Not all auditory sensations are evoked by sound, e.g., tinnitus.

NOTE 2 The medium in which the sound exists is often indicated by an appropriate adjective, e.g., air-borne, water-borne, or structure-borne.

2.02 ultrasound. Sound at frequencies greater than 20 kHz.

NOTE A frequency of 20 kHz is the limit of the approximate upper range of human hearing.

2.03 infrasound. Sound at frequencies less than 20 Hz.

NOTE A frequency of 20 Hz is the approximate lower limit of the range of human hearing.

2.04 acoustics. (a) Science of sound, including its production, transmission, and effects, including biological and psychological effects. (b) Those qualities of a room that, together, determine its character with respect to auditory effects.

2.05 acoustic, acoustical. Qualifying adjectives meaning containing, producing, arising from, actuated by, related to, or associated with sound. Acoustic is used when the term being qualified designates something that has the properties, dimensions, or physical characteristics associated with sound waves; acoustical is used when the term being qualified does not designate explicitly something that has such properties, dimensions, or physical characteristics.

NOTE 1 Examples that should use the qualifying adjective *acoustic* are impedance, inertance, load (radiation field), output (sound power), energy, wave, medium, signal, absorptivity, and transducer.