
AMERICAN NATIONAL STANDARD

Criteria for Evaluating Speech Privacy in Healthcare Facilities

ANSI/ASA S12.70-2016

Accredited Standards Committee S12, Noise

Standards Secretariat
Acoustical Society of America
1305 Walt Whitman Road, Suite 300
Melville, NY 11747

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.



AMERICAN NATIONAL STANDARD

Criteria for Evaluating Speech Privacy in Healthcare Facilities

Secretariat:

Acoustical Society of America

Approved on July 19, 2016 by:

American National Standards Institute, Inc.

Abstract

This standard provides acoustical performance criteria, design requirements, and design guidelines to meet the speech privacy needs for both new design and retrofits of healthcare facilities. This document provides a) a method for selecting speech privacy goals based on occupant needs, by type of space and use, b) design requirements and guidelines for developing a strategy for the architectural design and acoustical materials selection, and c) a method for verifying and analyzing speech privacy design performance.

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).

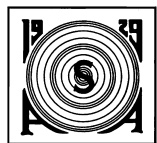
These standards are developed and published as a public service to provide standards useful to the public, industry, and consumers, and to Federal, State, and local governments.

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.



Acoustical Society of America
Standards Secretariat
1305 Walt Whitman Road, Suite 300
Melville, New York 11747
Telephone: 1 (631) 390-0215
Fax: 1 (631) 923-2875
E-mail: asastds@acousticalsociety.org

© 2016 by Acoustical Society of America. This standard may not be reproduced in whole or in part in any form for sale, promotion, or any commercial purpose, or any purpose not falling within the provisions of the U.S. Copyright Act of 1976, without prior written permission of the publisher. For permission, address a request to the Standards Secretariat of the Acoustical Society of America.

Contents

1	Scope and application	1
1.1	Scope	1
1.2	Application.....	1
2	Normative references	1
3	Terms and definitions	2
4	Acoustical performance criteria, design requirements, and guidelines for speech privacy in healthcare facilities	4
4.1	Introduction	4
4.2	Performance criteria for speech privacy in healthcare facilities.....	5
5	Evaluation and verification of speech privacy performance	7
Annex A (informative)	Architectural design guidelines	8
A.1	Architectural design requirements – sound isolation	8
A.2	Acoustical design requirements – background sound	8
A.3	Sound isolation.....	9
A.4	Sound masking	10
Annex B (informative)	Measurements for verification of conformance with speech privacy criteria	12

Figures

Figure A.1 — Range of recommended frequency spectrum shape for electronic sound masking systems for both open- and closed-plan spaces	11
---	----

Tables

Table 1 — Typical healthcare spaces by type.....	5
Table 2 — Performance criteria for speech privacy in healthcare facilities	5
Table A.1 — Background sound produced by mechanical systems in healthcare facility spaces.....	8
Table A.2 — Recommended composite sound transmission class ratings (STC _c) of demising assemblies between enclosed rooms	9
Table A.3 — Composite sound transmission class ratings (STC _c) for various partition systems	10

Foreword

[This Foreword is for information only, and is not a part of the American National Standard ANSI/ASA S12.70-2016 American National Standard Criteria for Evaluating Speech Privacy in Healthcare Facilities. As such, this Foreword may contain material that has not been subjected to public review or a consensus process. In addition, it does not contain requirements necessary for conformance to the standard.]

This standard comprises definitions, standards, and specifications for use in noise. It was developed and approved by Accredited Standards Committee S12 Noise, under its approved operating procedures. Those procedures have been accredited by the American National Standards Institute (ANSI). The Scope of Accredited Standards Committee S12 is as follows:

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.

This standard is entirely new and uses Articulation Index (AI) and Privacy Index (PI) to evaluate speech privacy in both closed- and open-plan architectural spaces, and is not comparable to any existing ISO Standard.

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

W.J. Murphy, *Chair*
S.J. Lind, *Vice-Chair*

S.B. Blaeser, *Secretary*

3M Occupational Health and Environmental Safety Division	E.H. Berger
Acoustical Society of America	R.D. Hellweg
.....	D. Lubman (Alt.)
Air Movement and Control Association, Inc.	J.A. Brooks
.....	M. Stevens (Alt.)
Air-Conditioning and Refrigeration Institute	S.J. Lind
.....	D. Abbate (Alt.)
American Academy of Audiology	T. Ricketts
.....	C. Schweitzer (Alt.)
American Academy of Otolaryngology Head and Neck Surgery	R.A. Dobie
.....	A. Kim (Alt.)
American Industrial Hygiene Association	D. Driscoll
.....	M. Kram (Alt.)
American Speech-Hearing-Language Association	L.A. Wilber
.....	N. DiSarno (Alt.)
Caterpillar, Inc.	K.G. Meitl
Compressed Air and Gas Institute	R.C. Johnson
.....	D.R. Bookshar (Alt.)

Council for Accreditation in Occupational Hearing Conservation	Vacant L.D. Hager (Alt.)
Emerson Electric – Copeland Corporation	A.T. Herfat G. Williamson (Alt.)
ETS-Lindgren Acoustic Systems	D. Winker M. Black (Alt.)
ExxonMobil	B. Moulton
G.R.A.S. Sound & Vibration	B. Schustrich J. Soendergaard (Alt.)
GE Aviation	R. Majjigi R. Babbitt (Alt.)
General Motors	D.B. Moore
Honeywell Safety Products	R. Ghent B. Witt (Alt.)
Information Technology Industry Council	W.M. Beltman J. Rosenberg (Alt.)
Institute of Noise Control Engineering	J.M. Cuschieri B. Tinianov (Alt.)
International Safety Equipment Association	J. Birkner C.Z. Fargo (Alt.)
John Deere	S. Suh
National Council of Acoustical Consultants	B.M. Brooks G.E. Winzer (Alt.)
National Hearing Conservation Association	T. Thunder R. Paulsen (Alt.)
National Institute for Occupational Safety and Health	W.J. Murphy E. Zechmann (Alt.)
NIST National Voluntary Laboratory Accreditation Program	K. Harper
National Park Service	M. McKenna K. Fristrup (Alt.)
Noise Control Engineering, Inc.	M. Bahtiarian R. Fischer (Alt.)
Noise Pollution Clearinghouse	L. Blomberg
PCB Group	K. Cox L. Harbaugh (Alt.)
Power Tool Institute, Inc.	W.D. Spencer M. Hickok (Alt.)
Schomer and Associates, Inc.	P.D. Schomer

U.S. Air Force	R. McKinley
.....	H. Gallagher (Alt.)
U.S. Army Aeromedical Research Laboratory	W. Ahroon
U.S. Army Construction Engineering Research Laboratory	M.J. White
.....	M. Swearingen (Alt.)
U.S. Army Public Health Command	C. Stewart
.....	M. Robinette (Alt.)
U.S. Army Human Research and Engineering Directorate	J. Gaston
.....	P. Fedele (Alt.)
U.S. Department of Transportation	C. Mittelholtz
.....	C. Roof (Alt.)
U.S. Naval Surface Warfare Center - Carderock	S. Anderson
.....	W. Martin (Alt.)
Université du Québec ETS	J. Voix
.....	F. Laville (Alt.)

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

P.K. Baade	A. Konheim	R.J. Peppin
E.H. Berger	W.W. Lang	J. Schmitt
B.M. Brooks	S.J. Lind	P.D. Schomer
A.J. Campanella	D. Lubman	L.C. Sutherland
L.S. Finegold	D. Michaud	W.R. Thornton
R.D. Godfrey	N.P. Miller	L.A. Wilber
R.D. Hellweg	W.J. Murphy	G.E. Winzer
	M.A. Nobile	

Working Group S12/WG 44 Speech Privacy, which assisted Accredited Standards Committee S12, Noise, in the development of this standard, had the following membership.

G.C. Tocci and D.M. Sykes, Co-Chairs

W.J. Cavanaugh	K.W. Good Jr.	K.P. Roy
	E.L. Reuter	

Suggestions for improvements to this standard will be welcomed. They should be sent to Accredited Standards Committee S12, Noise, in care of the Standards Secretariat of the Acoustical Society of America, 1305 Walt Whitman Road, Suite 300, Melville, New York 11747. Telephone: 631-390-0215; FAX: 631-923-2875; E-mail: asastds@acousticalsociety.org.