
AMERICAN NATIONAL STANDARD

Methods for Measuring the Real-Ear Attenuation of Hearing Protectors

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Accredited Standards Committee S12, Noise

Standards Secretariat
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Secretariat:
Acoustical Society of America

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Abstract

This standard specifies laboratory-based procedures for measuring, analyzing, and reporting the passive noise-reducing capabilities of hearing protectors. The procedures consist of psychophysical tests conducted on human subjects to determine the real-ear attenuation measured at hearing threshold. Two fitting procedures are provided: Method A) trained-subject fit, intended to describe the capabilities of the devices fitted by carefully trained users, and Method B) inexperienced-subject fit, utilizes subjects with little or no experience with respect to the use of hearing protection, in order to approximate the attenuation that can be attained by groups of users as reported in real-world occupational studies. Regardless of test method, the attenuation data will be valid only to the extent that the users wear the devices in the same manner as during the tests. This standard does not address issues pertaining to computational schemes or rating systems for applying hearing protector attenuation values (see ANSI/ASA S12.68), nor does it specify minimum performance values for hearing protectors, or address comfort or wearability features. Method A of this standard corresponds to ISO 4869-1:1990, *Acoustics – Hearing protectors – Part 1: Subjective method for the measurement of sound attenuation*, and Method B corresponds to ISO/TS 4869-5:2006, *Acoustics – Hearing protectors – Part 5: Method for estimation of noise reduction using fitting by inexperienced test subjects*.

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