# AMERICAN NATIONAL STANDARD

## **Criteria for Evaluating Room Noise**

ANSI/ASA S12.2-2019

Accredited Standards Committee S12, Noise

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

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Secretariat:

**Acoustical Society of America** 

Approved on May 21, 2019 by:

American National Standards Institute, Inc.

#### Abstract

This Standard provides three primary methods for evaluating room noise: a survey method that employs the A-weighted sound level; an engineering method that employs expanded noise criteria (NC) curves; and a method for evaluating low-frequency fluctuating noise using room noise criterion (RNC) curves.

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- Figure A.1 The spectrum of Example 1 plotted on the RNC curves. In this example sound exhibits no surging, but it does include large turbulence. The standard deviation of the sound level in the 3-band sum combined 16, 31.5 and 63-Hz octave bands is 3.2 dB. Using the tangent method, the highest RNC curve is contacted by the 31.5-Hz octave band and has a value of RNC-40. So this spectrum is reported as an RNC-40 (31.5 Hz). The correction factor of 3.6 dB that is added to the measured LEQ in the 31-Hz octave band changes this spectrum from an RNC-31 (8 kHz) to an RNC-40 (31.5 Hz).
- Figure A.2 The spectrum of Example 2 plotted on the RNC curves. In this example sound exhibits 15-dB peak-to-peak sinusoidal surging and large turbulence. The standard deviation of the sound level in the 3-band sum combined 16, 31.5 and 63-Hz octave bands is 3.1 dB. Using the tangent method, the highest RNC curve is contacted by the 31.5-Hz octave band and has a value of RNC-44. So this spectrum is reported as an RNC-44 (31.5 Hz). The correction factor of 11.3 dB that is added to the measured LEQ in the 31.5-Hz octave band changes this spectrum from an RNC-25 (250 Hz) to an RNC-44 (31.5 Hz).

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Table A.4 — This table contains the summary data for Example 2. The LEQ is the energy average for all time samples represented by the indicated column. The 3-band sum correction of 11.3 dB is added to the 31.5-Hz octave band LEQ and the 1.6-dB correction at 125 Hz is added to the LEQ in this octave band. Therefore, the reported adjusted 31.5-Hz octave-band level is 73.1 (the LEQ

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