

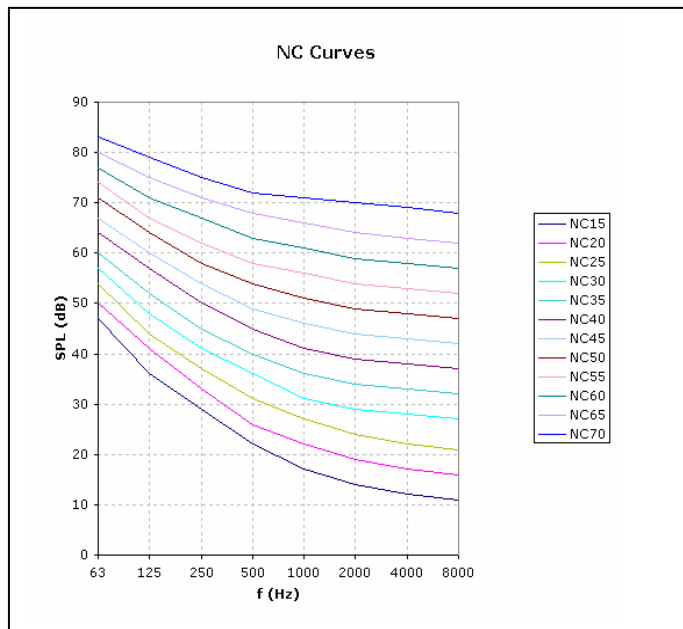


Criteria for Evaluating Room Noise

Indoor noise is more stable over time than outdoor transportation or environmental noise. Therefore, criteria for evaluating indoor noise and the ability to measure it has been well established and standardized for many years. Criteria for Evaluating Room Noise (ANSI S12.2-1995) is the standard defining the criteria for evaluating room noise inside buildings. The maximum acceptable background noise level generated by the mechanical systems in buildings is specified in terms of a number of standardized sound metrics.

- **Noise Criterion (NC) and Balanced Noise-Criterion (NCB)** NC and NCB are determined from comparing measured octave-band sound levels in an *occupied* room to standardized curves.
- **Room-Criterion (RC)** RC is determined from comparing measured octave-band sound levels in an *unoccupied* room to standardized curves. RC is predominantly used for design of HVAC systems.
- **Speech Interference Level (SIL)** SIL is used to determine the adequacy for speech communication in a room of the type under consideration.
- **Criteria for acoustically-induced vibrations (RV)** RV is used to estimate noise-induced vibrations in lightweight ceilings and ductwork that are exposed to threshold levels. The RV can be used to determine if light fixtures, doors, and windows can be expected to rattle audibly.

Either NCB or RC may be specified in order to help control the level and spectrum of noise in dwelling units, offices, auditoriums, hospital rooms, and other spaces intended for human occupancy. The RC and NCB ratings include procedures for checking different factors such as the rumble compliance (excessive noise at frequencies below 500 Hz) and the hiss compliance (excessive noise at frequencies above 1000 Hz).



Recommended Readings

Criteria for Evaluating Room Noise, ANSI S12.2-1995 (R1999)

American Institute of Physics and Acoustical Society of America, 1997