

What is the meaning of dBA and dBC?

The letters “A” or “C” following the abbreviation “dB” designate a frequency-response function that filters the sounds that are picked up by the microphone in the sound level meter. A frequency-response function, also called a weighting characteristic (meaning that some frequencies are given more weight or importance than others) can also be thought of as a tone control. It emphasizes or de-emphasizes sounds of certain pitches relative to others. The actual influence of the A- and C-weighting functions is illustrated in the Figure. The vertical axis shows relative response in decibels and the horizontal axis shows frequency measured in Hz or cycles/sec. (which is a measure of pitch).

Notice that the A weighting filters out the low frequencies and slightly emphasizes the upper middle frequencies around 2-3 kHz. By comparison C weighting is almost unweighted, or no filtering at all.

A-weighting is used to measure hearing risk and for compliance with OSHA and MSHA regulations that specify permissible noise exposures in terms of a time-weighted average sound level or daily noise dose. C-weighting is used in conjunction with A weighting (the dBA and dBC levels are compared) for certain computations involving computation of hearing protector attenuation such as use of the NRR.

For information on the use of dBC with the NRR, see [E-A-RLog 12](#).

