Appendix 12.1

Glossary of Acoustical Terminology

APPENDIX 12.1

GLOSSARY OF ACOUSTICAL TERMINOLOGY

"A" Weighting (dB(A))

The human ear does not respond uniformly to different frequencies. "A" weighting is commonly used to simulate the frequency response of the ear. It is used in the assessment of the risk of damage to hearing due to noise.

Decibel (dB)

The range of audible sound pressures is approximately 2 x 10^{-5} Pa to 200 Pa. Using decibel notation presents this range in a more manageable form, 0 dB to 140 dB.
Mathematically:
Sound Pressure Level (dB) = 20 log { P(t) / P_o } where
P_o = 2 x10^{-5}Pa and P(t) is the given sound pressure.

Frequency (Hz)

The number of cycles per second, for sound this is subjectively perceived as pitch.

Frequency Spectrum

Analysis of the relative contributions of different frequencies that make up a noise.

Noise

Unwanted sound.

$L_{Aeq,T}$

Equivalent Continuous A-weighted sound Pressure Level -the value of the A-weighted sound pressure level in decibels of continuous steady sound that within a specified time interval, *T*, has the same mean-squared sound pressure as a sound that varies with time. It is given by the following equation:

$$L_{Aeq,T} = 10 * \log_{10}\left\{\left(1/T\right)\int_{t_1}^{t_2}\left(P_A^{\,2}/P_0^{\,2}\right)dt\right\}$$

where: $L_{Aeq,T}$ is the equivalent continuous A-weighted sound pressure level determined over a time interval $T = t_2 - t_1$; P_O is the reference sound pressure (2 x10^{-5}Pa); $P_A(t)$ is the instantaneous A-weighted sound pressure (Pa).

Ambient Noise

Totally encompassing sound in a given situation at a given time usually composed of sound from many sources near and far.

$L_{A90,T}$

Background Noise Level - **t**he A-weighted sound pressure level of the residual noise at the assessment position that is exceeded for 90 % of a given time interval, *T*, measured using time weighting, *F*, and quoted to the nearest whole number of decibels.

$L_{A10,T}$

The A-weighted sound pressure level of the residual noise in decibels exceeded for 10% of a given time interval. This is the parameter defined by the government to describe road traffic noise.

L_{Amax}

The maximum root mean square RMS A-weighted sound pressure level occurring within a specified time period.

L_{Amin}

The minimum RMS A-weighted sound pressure level occurring within a specified time period.