

Appendix A15.1 Glossary of Noise Terms

Term	Definition
Acceleration	The rate of change of velocity, measured in millimetres per second per second (mm/s^2)
A-Weighting	The "A" suffix denotes the fact that the sound levels have been "A-weighted" in order to account for the non-linear nature of human hearing. All sound levels in this report are expressed in terms of decibels (dB).
Criterion Noise Level	The long-term mean value of the noise level that must not be exceeded.
dB	Decibel - The scale in which sound pressure level is expressed. It is defined as 20 times the logarithm of the ratio between the RMS pressure of the sound field and the reference pressure of 20 micropascals ($20 \mu\text{Pa}$).
Hertz	The unit of sound frequency in cycles per second.
$L_{Aeq,T}$	This is the equivalent continuous sound level. It is a type of average and is used to describe a fluctuating noise in terms of a single noise level over the sample period (T).
L_{AN}	The A-weighted noise level exceeded for N% of the sampling interval.
L_{A90}	Refers to the A-weighted noise levels in the lower 90 percentile of the sampling interval; it is the level which is exceeded for 90% of the measurement period. It is commonly used to describe the background noise level.
L_{A10}	Refers to the A-weighted noise levels in the top 10 percentile of the sampling interval; it is the level which is exceeded for 10% of the measurement period.
L_{Amax}	The maximum RMS A-weighted sound pressure level occurring within a specified time period.
L_{pA} (dB)	An 'A-weighted decibel' - a measure of the overall level of sound across the audible frequency range (20Hz – 20kHz) with A-frequency weighting, known as 'A-weighting', to compensate for the varying sensitivity of the human ear to sound at different frequencies.
Noise Sensitive Receptor (NSR)	Any dwelling house, hotel or hostel, health building, educational establishment, place of worship or entertainment, or any other facility or other area of high amenity which for its proper enjoyment requires the absence of noise at nuisance levels.
Peak Particle Velocity (PPV)	This is the instantaneous maximum velocity reached by a vibrating element as it oscillates about its rest position.

Term	Definition
RMS	The RMS (Root Mean Square) value of a set of numbers is the square root of the average of their squares.
Sound Pressure Level	Sound pressure refers to the fluctuations in air pressure caused by the passage of a sound wave. It may be expressed in terms of sound pressure level at a point.
Sound Power Level (L _w)	The logarithmic measure of sound power in comparison to a referenced sound intensity level of one picowatt (1pW) per m ²
BS 4142 Definitions	
ambient sound level, L _a = L _{Aeq,T}	ambient sound level, L _a = L _{Aeq,T}
background sound level, L _{A90,T}	background sound level, L _{A90,T}
rating level, L _{Ar,T}	rating level, L _{Ar,T}
residual sound level, L _r = L _{Aeq,T}	residual sound level, L _r = L _{Aeq,T}