NZ TRANSPORT AGENCY
WAKA KOTAHI

New Zealand Government

Construction and Maintenance Noise from Roads

NZ TRANSPORT AGENCY

The NZ Transport Agency (NZTA) recognises that noise associated with road construction and repairs can be particularly intrusive and disturbing, especially at night.

The NZTA manages and minimises potentially unreasonable noise effects so far as is practicable, in accordance with the New Zealand construction noise standard.

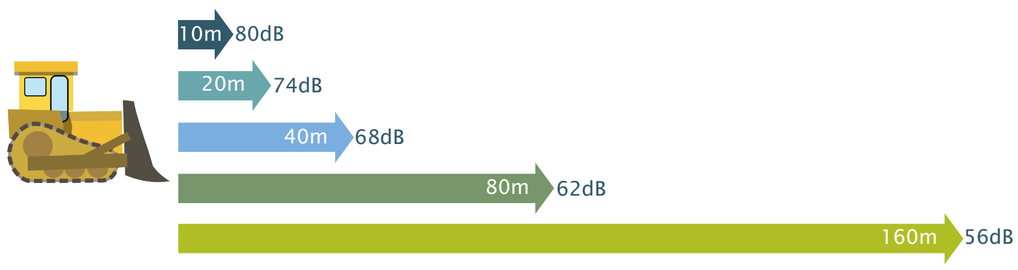
CONTROLS

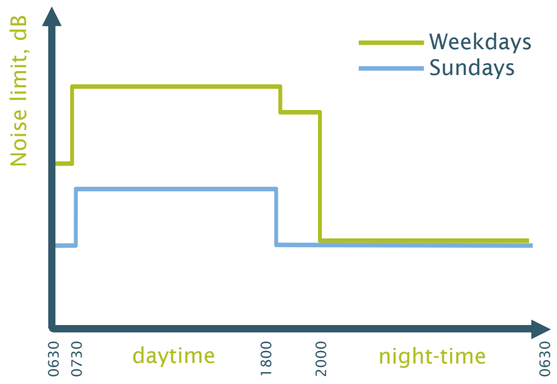
There are guideline noise limits for construction noise in New Zealand Standard 6803:1999. In some instances alternative criteria are required to allow for night-time work, or houses immediately adjacent to certain daytime works.

The nature of construction activity requires a flexible approach to noise management. The best outcomes for communities and individuals are achieved through proactive management and effective communication. A Construction Noise Management Plan defines consultant and contractor obligations for a project, and provides procedures to ensure good noise control practices are adopted. This includes procedures for maintaining contact with the community and managing noise complaints and contact numbers for key construction and council staff responsible for noise assessment.

It is important that neighbours are forewarned of the nature and timing of construction and maintenance work.

Noise reduces the further you are from the source. Levels are about 6 dB lower each time you double your distance from the source.





Indicative daily variations of construction noise limits outside neighbouring houses.

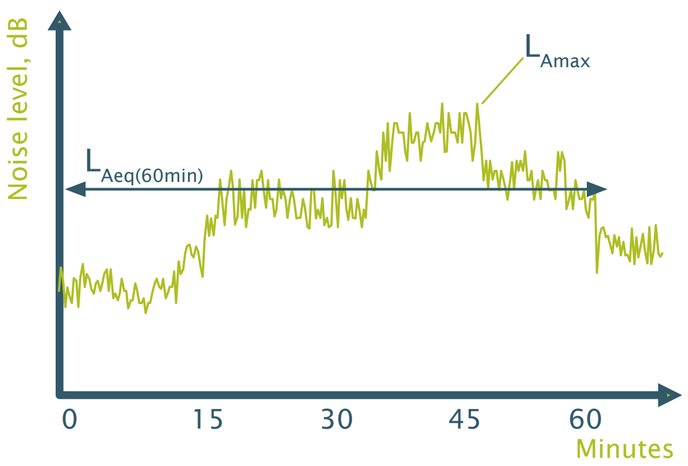
ACOUSTIC TERMS

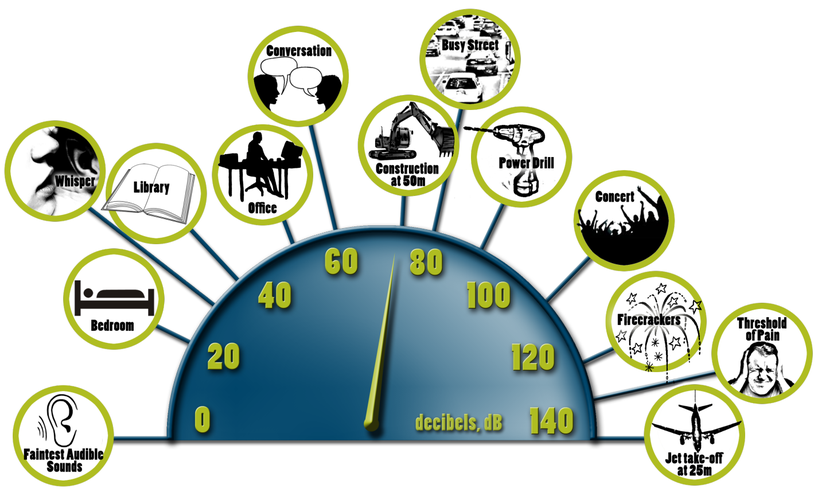
Sound contains different frequency components which are constantly changing. For comparison with noise limits, a standard method must be used to represent varying sound as a construction noise level.

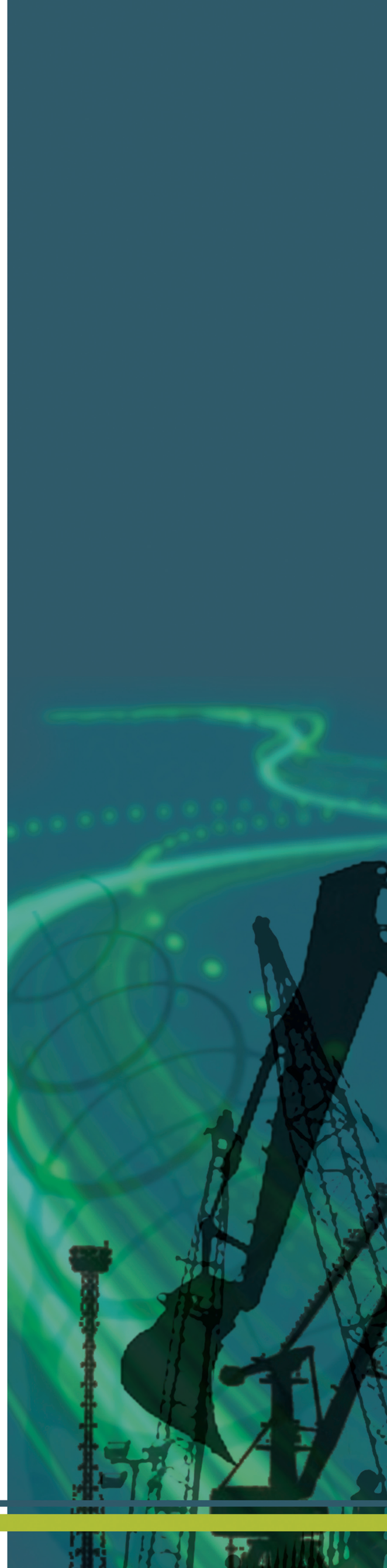
Noise sources cause changes in air pressure which are detected by our ears. These changes in pressure can also be measured by a sound level meter. The pressure changes are expressed in decibels, which is written as "dB".

Sound can occur across a whole range of frequencies from low frequency rumbles to high frequency chirps. Measured noise levels include all frequencies, but as our hearing is less sensitive to lower frequencies, the measured levels are adjusted to correspond to human hearing. This adjustment is called "A weighting" and is identified by the letter A.

Noise levels fluctuate and therefore it is necessary to consider both average (L_{Aeq}) and maximum (L_{Amax}) values. For construction noise, average values are assessed over a time period (t) between fifteen minutes and one hour, as appropriate to the particular activities. The average and maximum levels are shown in the graph below. The $L_{Aeq(t)}$ is obtained from an 'energy' average of the decibel values; this results in a higher average level than normal arithmetic averaging.







For further information on transport noise please visit **www.acoustics.nzta.govt.nz**