



Noise Regulations fact sheet

Noise Regulations (Part 3): noise measurement

November 2021

Purpose

This fact sheet provides guidance for users of the Environmental Protection (Noise) Regulations 1997 (Noise Regulations) relating to Part 3: noise measurement.

Noise measurement

The way to establish whether a noise emission is meeting the assigned level is to carry out sound level measurements. The instrument normally used for this is a sound level meter but special sound recorders and analysers may also be used. The science of sound measurement calls for certain rules to be put in place to ensure that the results will be fair and repeatable.

A noise emission level may be determined by measurement at the receiving point if other noise sources are not dominant, or by measurement at a reference position to enable calculation of the sound level at the receiver.

Measurements need to be done over a long enough period to represent the noise emission. For a constant noise, this may only need to be a few minutes, while for a noise that varies over time, a longer duration (up to several hours) may be needed to capture a sample that is typical of the noise, or to capture several cycles if the noise is repetitive.

The assessing officer uses the measurement results to determine the levels of the noise emission (e.g. $L_{A\max}$, L_{A1} or L_{A10} , as appropriate) over a representative assessment period of 15 minutes to four hours (as determined by an inspector or authorised person to be appropriate for the emission), for comparison with the assigned levels.

Note that the duration of the measurement period may differ from the representative assessment period.

Place of measurement

When the premises receiving the noise have a building or buildings and surrounding land, the noise may be measured either outside the buildings and within the premises boundary, or inside the buildings. The noise can only be measured inside if:

- the use of the building is directly associated with the type of premises receiving the noise; e.g. the building is an office on a commercial premises or a house on a noise-sensitive premises
- the building is of a type of construction that is typical of buildings so used; e.g. you would not carry out a sound measurement inside a tent, as a tent's construction is not typical of a house.

Where the premises receiving the noise are a caravan park or camping ground, measurements are to be made outside of a caravan, camp or park home.





The measurement is taken inside when either:

- there is no surrounding land, e.g. a block of units
- the noise is coming through a common wall or from another part of the building.

Where a measurement is made inside, the measured level is adjusted by either:

- +15 dB if the external doors and windows are shut
- +10 dB if the external doors and windows are open.

Microphone position

The microphone must be placed at least 1.2 metres above the ground and, if measured outdoors, at least 3 metres from any other sound-reflecting surface, if practicable, to avoid the effect of sound reflections. Indoor measurements must be made at least 1 metre from any open external window or door.

Measurement of airblast levels during blasting must be done outdoors, with the microphone 1.2 to 1.6 metres above the ground and at least 5 metres from any other reflecting surface.

Instrument calibration

Schedule 4 of the Noise Regulations sets out various standards to which the sound measuring instrument must comply.

The instrument must have been calibrated in an approved laboratory within the two-year period immediately preceding its date of use, to check that its performance meets the standards.

Field performance checks must be carried out before and after measurements.

Instruments used to measure airblast levels have additional requirements for low frequency performance.

More information

For further information, please contact the Environmental Noise Branch at the Department of Water and Environmental Regulation via email (info@dwer.wa.gov.au) or phone (08 6364 7000).

Legislation

This document is provided for guidance only. It should not be relied upon to address every aspect of the relevant legislation. Please refer to the Department of Justice, Western Australian Legislation [website](#) for copies of the relevant legislation.

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