

## 5.4 MEASUREMENT OF NOISE POLLUTION

Noise assessment is an examination of the nature and characteristics of a noise. It may involve verifying aural factors such as:

- The location of the noise source
- Its audibility at certain locations
- The time of the noise is made and its duration
- Its characteristics
- The reported effect it has on people A.

### Duration of noise test for intruder alarms:

- It does not matter whether the alarm sounds continuously or intermittently.

### Example:

A car alarm that sounds for 30 seconds , stops for 1 minute and then sounds again for another 30 seconds is taken to sound for 60 seconds, which is more than the 45 seconds prescribed for a vehicle alarm manufactured on or after 1 September 1997.

- For building intruder alarms, the assessment needs to be made inside a habitable room in a neighbor's residence. For vehicle intruder alarms the assessment can be made anywhere.
- The times of use or duration of the noise automatically make the noise offensive
- In other cases, it will be necessary to consider a range of factors to determine whether the noise is offensive, including the following:
  - The loudness of the noise, especially compared with other noise in the area
  - The character of the noise
  - The time and duration of the noise
  - Whether the noise is typical for the area
  - How often the noise occurs
  - The number of people affected by the noise

## Assessing noise with a sound level meter

- A sound level meter should be used to measure noise levels when:
  - Determining an acceptable noise level for inclusion in a planning approval or a Noise Control Notice or Prevention Notice
  - Testing whether a particular noise complies with a level prescribed in a planning approval or notice
- Gathering evidence to support an offensive noise test, such as :
  - Quantifying how loud the noise
  - Assessing how loud it is relative to the background noise
  - Determining the presence of annoying characteristics such as tones supporting a prosecution or disputed Penalty Notice.

### 1. Intrusive noise

- Noise is identified as 'intrusive' if it is noticeably louder than the background noise and considered likely to disturb or interfere with those who can hear it.
- Councils may have local policies about what they consider constitutes intrusive noise from specified activities in particular situations or locations.
- In these circumstances, it may be council policy that a particular intrusive noise is treated as offensive.
- It is into account the factors in the offensive noise checklist when setting local intrusive noise levels and descriptors.
- In the absence of a council policy, intrusive noise would not automatically be considered offensive.

### 2. Measuring noise

Noise measurements should be undertaken by officers properly trained to use noise equipment.

- If you are inexperienced with noise measurements, it is desirable that you get to know what typical decibel levels sound like.
- Become familiar with the sound level meter and its controls.
- Decide when the noise is representative of the worst case level of noise from the source or activity being investigated and take measurements at this time.

- Avoid taking measurements when it is raining or the average wind speed exceeds 5 metres per second at microphone height.
- Calibrate the sound level meter before and after each set of noise measurements
- Ensure the sound level meter is in the correct position.
- Measure the noise under investigation for long enough to establish that the measured value is representative of the subject noise.
- Measure the noise at the location where the impact occurs.
- When the noise under investigation is affected by extraneous noise be sure that the subject noise is what you are measuring.
- Use correction factors.

### **Sequence of steps for measuring noise**

- Before going out to take a measurement, check that the sound level meter has a current calibration certificate issued by an accredited laboratory (for example, NATA).
- Familiarise yourself with the meter and its settings.
  - Select a representative location and time of day to take measurements, taking into account information about the subject noise and any complaints received.
  - Set the microphone at 1.2 to 1.5 metres above the ground and, where feasible, avoid measurements within 3 metres of any walls, buildings and other reflecting surfaces.
  - Ensure weather conditions are suitable: no rain and a wind speed of less than 5 m/s and note these prevailing conditions in a log book.
- Do a field calibration of the sound level meter .
  - Measure the subject noise for a pre-determined period (such as 15 minutes) and check that the selected descriptor (for example LAeq) is suitable.
  - If there is variation in the source noise level during the set period of measurement, increase your confidence in the value being representative of the worst case by taking a second and perhaps a third reading for the same period of time.

- If necessary, measure the LA90 background noise level for the same set period in the absence of the subject noise.
- Where noise other than that under consideration occurs during measurement, take another reading to avoid the readings being contaminated.
- At the end of the measurements do another field calibration of the sound level meter.
  - If there is more than a 1 decibel variation between the calibrated level and the first calibrated level, the measurements may be invalid, in which case the measurement procedure will need to be repeated.
- Document observations of weather and noise that were heard during the measurements, including the time of specific events that may affect readings, such as a frog croaking or a dog barking.



