

The influence of microphone location on the results of urban noise measurements

Montes González D.

Barrigón Morillas J.M.

Rey Gozalo G.

When carrying out acoustical measurements in order to construct an urban noise map, the ISO 1996 international standard is usually taken as a reference. However, this standard does not determine the precise location where we should place the measuring equipment. Instead, in some cases the standard offers corrections for the measured sound pressure level to assure reproducibility and comparability in the results. In this paper, we have carried out simultaneous measurements with two sound-level meters to study the effect of varying the location of the measuring equipment in terms of its height and the distance to the rear façade. The results indicate the need to apply some corrections due to reflexions on the façade with lower values than those recommended by the standard. In addition, it has been found necessary to make corrections for the distance to the source. Discrepancies between the standard and the results could be explained by the existence of screening effects associated with the parking lanes. © 2014 Elsevier Ltd. All rights reserved.

Environmental noise standards

Microphone location

Urban noise measurements

Acoustic noise

Acoustic noise measurement

Acoustics

Microphones

Noise pollution

Underground structures

Acoustical measurements

Environmental noise

International standards

Measuring equipments

Precise locations

Simultaneous measurement

Sound pressure level

Urban noise

Acoustic measuring instruments