



“Gheorghe Asachi” Technical University of Iasi, Romania



NOISE SOURCES CHARACTERIZATION INSIDE AND OUTSIDE A FACTORY

Claudia Tomozei^{1*}, Arianna Astolfi², Valentin Nedeff¹, Gabriel Lazar¹

¹*“Vasile Alecsandri” University of Bacau, Department of Environmental Engineering and Mechanical Engineering, Romania*
²*Politecnico di Torino, Department of Energetics, Turin, Italy*

Abstract

This work deals with noise pollution inside and outside a factory. Measurement of noise power level emitted by two sources located inside an industrial plant was carried out according to EN ISO 3746 and the transmission of noise coming from inside to outside was investigated by measurements and calculations according to EN 12354-4.

SPL measurements were performed around the machines in a factory and the sound power level calculated after the influence of background noise and reverberation was excluded. The problems encountered in the application of the EN ISO 3746 measurement protocol and the calculation of the correction coefficient for undesired reflections was described.

Noise was emitted from a source located inside the main building and SPL measurements were carried out near the noise source and outside the building at 3 m, 6 m, 12 m and 24 m. The measurement results were compared with the ones calculated, according to the EN 12354-4 Standard, showing a good correspondence. The maximum difference between measured and calculated data is 1.8 dB, at 3 m from the factory wall.

Key words: industrial noise, noise level measurement, noise propagation, sound insulation, sound power level

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* Author to whom all correspondence should be addressed: e-mail: claudia.tomozei@ub.ro