

A proposed new formula to determine the sound insulation of concrete walls

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Abstract

This research work includes study of sound insulation property of concrete samples with different densities. This study intended to present a proposed empirical formula to determine the sound insulation of concrete walls using the ultrasonic instrument. Experimental tests on concrete samples were made using the ultrasonic instrument, the sound insulation of concrete walls calculated according to a proposed empirical formula made in this work. This formula takes into consideration pulse velocity, wall width, and frequency. This formula is supported on a statistical criteria. The results are evaluated and compared with the values that computed using the most well-known formula, the comparison show compatibility of the results with tolerance of (3%).