

Experimental Study of the Sound Absorption of a Geopolymer Panel with a Textile Component Designed for a Railway Corridor

Authors : Ludmila Fridrichová, Roman Knížek, Pavel Němeček, Katarzyna Ewa Buczkowska

Abstract : The design of the sound absorption panel, which consists of three layers, is presented in this study. The first layer of the panel is perforated and provides sound transmission to the inner part of the panel. The second layer is composed of a bulk material whose purpose is to absorb as much noise as possible. The third layer of the panel has two functions: the first function is to ensure the strength of the panel, and the second function is to reflect the sound back into the bulk layer. Experimental results have shown that the size of the holes in the perforated panel affects the sound absorption of the required frequency. The percentage of filling of the perforated area affects the quantity of sound absorbed.

Keywords : sound absorption, railway corridor, health, textile waste, natural fibres, concrete

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