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ACOUSTIC PROPERTIES EVALUATION OF SOUND ABSORBING PANELS PROTOTYPES

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Abstract

Current concerns about pollution prompt us to resort to various methods to combat it. Regarding noise pollution, it can be said that its level has exponentially increased in recent years. Although we may not always perceive it, noise pollution has adverse effects on the human body. Due to this, authorities are starting to implement measures by introducing permissible noise limits. One of the methods adopted by authorities is to install sound-absorbing or sound-proofing panels between the noise source and residential, industrial or recreational areas. The present study aims to conduct a comparative analysis between two prototypes of such panels: one based on epoxy resin, and the other made from recycled polyethylene terephthalate (commonly named PET) fragments and epoxy resin. As for the prototype composed of PET fragments, it also contains air bubbles in its composition, precisely to facilitate obtaining much better absorption coefficient values. The analysis conducted on the two types of samples revealed that the use of PET fragments, in combination with resin and air bubbles, can lead to the construction of efficient and sustainable acoustic panels.

Key words: absorption coefficient, noise pollution, reutilized material, sound absorbent panel

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