

## The Use of Seashell by-Products in Pervious Concrete Pavers

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**Abstract :** Pervious concrete is a green alternative to conventional pavements with minimal fine aggregate and a high void content. Pervious concrete allows water to infiltrate through the pavement, thereby reducing the runoff and the requirement for stormwater management systems. Seashell By-Products (SBP) are produced in an important quantity in France and are considered as waste. This work investigated to use SBP in pervious concrete and produce an even more environmentally friendly product, Pervious Concrete Pavers. The research methodology involved substituting the coarse aggregate in the previous concrete mix design with 20%, 40% and 60% SBP. The testing showed that pervious concrete containing less than 40% SBP had strengths, permeability and void content which are comparable to the pervious concrete containing with only natural aggregate. The samples that contained 40% SBP or higher had a significant loss in strength and an increase in permeability and a void content from the control mix pervious concrete. On the basis of the results in this research, it was found that the natural aggregate can be substituted by SBP without affecting the delicate balance of a pervious concrete mix. Additional, it is recommended that the optimum replacement percentage for SBP in pervious concrete is 40 % direct replacement of natural coarse aggregate while maintaining the structural performance and drainage capabilities of the pervious concrete.

**Keywords :** seashell by-products, pervious concrete pavers, permeability, mechanical strength

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