

CHARACTERIZATION OF WATER RETENTION AND HYDRAULIC CONDUCTIVITY PROPERTIES FOR GRADED RECYCLED AGGREGATES BLENDED WITH AUTOCLAVED AERATED CONCRETE GRAINS IN VIETNAM

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Permeable pavement systems (PPS) play a crucial role in contribution for reducing surface runoff during heavy rainfall (flood control) and mitigating road surface temperature (reduction in urban heat island). The purpose of this study is to improve water retention capacity for recycled road-base materials blending with autoclave aerated concrete (AAC) grain and to evaluate the effect of mixing proportion of AAC grains on water retention and hydraulic conductivity properties. Graded recycled concrete aggregate (RCA; 0.075-37.5 mm) and fired-clay brick (RCB; 0.075-37.5 mm) made from construction and demolition waste (CDW) masonry which was taken from the CDW dumping site in Vietnam and the graded recycled aggregates were blended with AAC grains (0.106-2 mm) from Vietnam in this study. A comprehensive laboratory evaluation of water retention and hydraulic conductivity characteristics of recycled CDW materials was carried out. The results showed that the mixing of AAC grains contributed highly to increase water retention capacity and hydraulic conductivity for both graded RCA and RCB.

Keywords: Recycled construction and demolition waste, Masonry, Autoclaved aerated concrete, Water retention capacity, Hydraulic conductivity