

عنوان مقاله:

Effect of Wastewater Curing and Elevated Temperature on Recycled Concrete Aggregates from Construction and Demolition Wastes

محل انتشار:

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خلاصه مقاله:

In this study, natural coarse aggregates were replaced with coarse recycled concrete aggregate (RCA) in ۰ %, ۵۰ %, and ۱۰۰ % extracted from construction and demolition wastes. Their recycling could lead to a greener resolution for preserving the environment and paving the way for sustainability through solid waste management. The compressive strength of ۰ %, ۵۰ % and ۱۰۰ % RCA at ۳۶۵ days was reduced by ۳.۹۷ %, ۴.۸۸ %, ۶.۸۱ %, respectively, compared to the compressive strength at ۲۸ days. Tensile strength at ۳۶۵ days was reduced by ۴.۳۱ %, ۶.۵۰ % and ۹.۸۳ % compared to tensile strength at ۲۸ days. There was no discernible effect of water type on the strength properties of concrete. Compared to other combinations, ۱۰۰ % RCA concrete experiences a greater percentage of weight loss owing to evaporation of free water. When temperature was elevated, the concrete matrix expands and deep cracks were observed on the concrete surface. The overall performance of recycled aggregate concrete was not much influenced by the use of such aggregates, so these findings will add a new achievement to a sustainable construction through solid waste management.

کلمات کلیدی:

Concrete, Curing, Demolished waste, Recycled aggregate, Solid waste, Wastewater

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