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Improving the performance of recycled aggregate concrete using nylon waste fibers

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Abstract

The use of coarse recycled aggregates (CRA) as the replacement for natural aggregates is an eco-friendly solution to alleviate the extraction of natural resources and the harmful effects of demolition wastes on the environment. However, the mechanical and durability characteristics of CRA concrete are generally inferior compared to ordinary concrete. The performance of CRA concrete can be supplemented using different fibers and secondary binder materials. This study encourages the idea of using recycled nylon fiber (RNF) to upgrade the ductility of high-performance concrete (HPC) made with CRA. For this purpose, the effect of RNF on HPC properties was explored. RNF was introduced in HPC at