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MARBLE FILLERS EFFECT ON THE MECHANICAL PERFORMANCE OF A RECYCLED AGGREGATE CONCRETE

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Abstract

The aim of the present work is to investigate the effect of marble waste fillers incorporation on the mechanical properties of Recycled Aggregate Concrete (RAC). The RAC studied mixes were 0, 5, 8 and 10% (by weight of cement) of marble fillers respectively. Direct tests of compressive and flexural strength and non-destructive testing (NDT) (rebound hammer, ultrasonic) were performed. The optimal content of 5% marble fillers showed an improvement for both used test methods (compression, flexion and NDT). The increase of RAC compressive strength was about 15%, whereas the flexural strength reached 10% increase compared to control natural crushed aggregate concrete (CAC).

Key words: marble fillers, mechanical strength, natural aggregate, non-destructive testing (NDT), recycled aggregate concrete

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