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## Influence of CDW Recycled Aggregate on Drying Shrinkage of Mortar

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### ABSTRACT

The use of fine recycled aggregates as raw material in the production of mortars appears as a good alternative to minimize waste disposal, so as to reduce natural resources consumption and to find and supply suitable substitutes for natural aggregates. However, the use of this alternative material in a safe way must be carried out by a wide investigation of its long term behavior. In this way, this paper will examine the mechanical strength, physical properties and drying shrinkage of mortar, which use recycled fine aggregates that have originated from construction and demolition waste (CDW) containing mortar (55%), ceramic (26%) and concrete (16%). Two natural mortars, made with natural sand, were produced with cement/sand ratios of 1:4 and 1:8 (by weight) and a fixed consistency index of  $260 \pm 10$  mm. Recycled mortar was produced with 50% of substitution rate, in volume, of natural aggregate by recycled one. Results show that recycled mortars present higher total porosity, absorption rate and drying shrinkage than reference mortar.

### KEYWORDS

Recycled Mortar; Construction and Demolition Waste; Drying Shrinkage; Recycled Aggregate

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