

Formulation and Physico-Mechanical Characterization of a Self-Compacting Concrete Containing Seashells as an Addition Material

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Abstract : The aim of this work is to study the rheological and physico-mechanical properties of a self-compacting concrete elaborated with sea shells as an addition cementitious (total replacement of limestone fillers) and sand (partial and total substitution fine aggregate). Also, this present study is registered in the context of sustainable development by using this waste type which caused environmental problems. After preparation the crushed shells (obtaining fine aggregate) and finely crushed shells (obtaining end powder), concretes were manufactured using these two products. Rheological characterization tests (fluidity, filling capacity and segregation) and physico-mechanical properties (density and strength) were carried on these concretes. The results obtained show that it can be used as fin addition (by total replacement of limestone) or also used as sand by total substitution of natural sand.

Keywords : seashells, limestone, sand, self-compacting concrete, fluidity, compressive strength, flexural strength

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