

Enhancement of Cement Mortar Mechanical Properties with Replacement of Seashell Powder

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Abstract : Many synthetic additives have been using for improve cement mortar and concrete characteristics, but natural additive is a friendly environment option. The quantity of (2% and 4%) seashell powder has been replaced in cement mortar, and compared with plain cement mortar in early age of 7 days. The strain gauges have been installed on beams and cube, for monitoring fluctuation of flexural and compressive strength. Main objective of this paper is to study effect of linear static force on flexural and compressive strength of modified cement mortar. The results have been indicated that the replacement of appropriate proportion of seashell powder enhances cement mortar mechanical properties. The replacement of 2% seashell causes improvement of deflection, time to failure and maximum load to failure on concrete beam and cube, the same occurs for compressive modulus elasticity. Increase replacement of seashell to 4% reduces all flexural strength, compressive strength and strain of cement mortar.

Keywords : compressive strength, flexural strength, compressive modulus elasticity, time to failure, deflection

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