

The Effects of Microsilis, Super Plasticizer and Air Entrain in Lightweight Expanded Perlite Concrete

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Abstract : This paper presents the results of a laboratory study carried out on effect of using the simultaneous of microsilis, super plasticizer and air entrain additives on compressive strength of light weight perlite concrete. In this study, 63 test specimens with different percentage and mixtures including microsilis, super plasticizer and air entrain were used. 63 test specimens with different mixtures including microsilis and air entrain were also prepared for comparison purposes. In the mixtures, lightweight perlite aggregate, microsilis, super plasticizer, air entrain, cement type I, sand and water were used. Laboratory test results showed that workability of lightweight perlite concrete was increased and compressive strength was released by the use of super plasticizer, without any change in water/cement ratio. We know that compressive strength of concrete is depends on water/cement ratio. Since, it was expected that the use of air entrain and super plasticizer lower water/cement ratio and raised strengths, considerably. It was concluded that use of simultaneous of air entrains and super plasticizer additive were not economical and use of air entrain and microsilis is better than use of air entrain, super plasticizer and microsilis. It was concluded that the best results were obtained by using 10% microsilis and 0.5% air entrain.

Keywords : perlite, microsilis, air entrain, super plasticizer

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