Effect of superplasticizer on plastic shrinkage of plain and silica fume cement concretes

Baghabra Al-Amoudi O.S., Abiola T.O., Maslehuddin M.

Construction and Building Materials
Vol. 20, Issue.9, 2006

Abstract: Four types of superplasticizers were used in conjunction with three types of silica fume to prepare cement concrete slab specimens that were utilized to measure plastic shrinkage strain and time to attain maximum strain. The concrete slab specimens were cast and placed in an exposure chamber in which the relative humidity, temperature, and wind velocity were kept at 35 ī 2 ±ī 45 ,%5 ±ī°C, and 15 2 ±ī km/h, respectively. Results of this investigation indicate that the plastic shrinkage strain varied with the type of superplasticizer and the type of silica fume. Maximum plastic shrinkage strain was measured in the undensified silica fume cement concrete with all superplasticizers. Incompatibility was noted between polycarboxylic ether superplasticizer and plain and two types of silica fume cement concretes. 2005 ©ī Elsevier Ltd. All rights reserved.