ROLE OF WATER-BINDER RATIO ON THE STRENGTH DEVELOPMENT IN MORTAR WITH SILICA FUME

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ABSTRACT

According to Abram's generalization law, concrete's compressive strength is inversely varied with water-binder ratio and the compressive strength of concrete also affected by others factor such as propertied of chemical composition of cement, composition of the mixtures, microstructures, properties of aggregates, admixture and etc. in this project, the role of vary water-binder ratio on strength of mortars with different content of silica fume that is replaced the weight of cement in mixes was verified. Cement/sand ratios are adjusted from 1:2.4 to 1:3 to use. The water/cement ratio varied from 0.30 to 0.6 at a constant increment of 0.1. Besides that, Silica fume was added as an admixture with different contents at each cement/sand ratio. For all the mortar mixes, the compressive strength of mortar was determined at ages of 7 and 28 days.