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Influence of Mineral Admixture on strength Aspects of Self Compacting Concrete

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Abstract: This paper presents an experimental investigation on the strength characteristics of Self-compacting concrete (SCC) with mineral admixture namely flyash. Self-compacting concrete gets compacted under its own weight and de-aerated almost completely while flowing in the formwork. It is cohesive enough to fill the spaces of almost any size and shape without segregation or bleeding. The several series of tests involving various binder combinations, water-binder ratio and high range water reducing admixtures and set retarding admixtures were used to optimize the mixture proportions of SCC. Various tests to study the characteristics of fresh concrete were Slump flow, U-tube, V-funnel and L-box. For hardened concrete, tests namely compressive and split tensile at 3,7,14 and 28 days strength were also investigated. Test results shows that the workability characteristics of SCC are within the limiting constraints of SCC. Replacement of flyash is about 30% by weight of cement. SCC of grades ranging from M30 to M80 were investigated. The maximum compressive strength of SCC for M80 at 28 days age of curing was 81MPa.

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