



Strength and durability properties of fiber reinforced self compacting concrete with alccofine

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Abstract: Self Compacting Concrete is a newly developed concept in which the ingredients of the concrete mix are proportioned in such a way that it can flow under its own weight to completely fill the formwork and passes through the packed reinforcement without segregation and self consolidate without any mechanical vibration. Efforts for improving the performance of concrete over the past few years suggest that cement replacement materials such as Mineral admixtures can improve the strength and durability characteristics of concrete. Alccofine is pozzolanic material and the ultrafine particles of alccofine provide better workability, strength as well as economical one. An experimental investigation was carried out to study the effect of Alccofine on fiber reinforced self compacting concrete. SCC mixes incorporating different percentages (0%, 10%, 20%, 30% and 40%) of alccofine by weight of cement along with 1% of *steel fiber*. Super plasticizer Conplast SP430 was used to maintain workability with constant Water-cement ratio. Several tests such as Slump flow, V-funnel, L-box, U-box, J-ring tests are carried out to check the rheological properties of concrete. Strength properties was determined such as compressive, split tensile and flexural strength test and also the *durability* properties was determined such as water absorption, acid resistance, sulphate resistance test. This is done to determine the efficiency and optimum percentage of replacement at which maximum strength is achieved.

Keywords : SCC, Alccofine, *steel fiber*, Rheological properties, *Durability*.

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