

عنوان مقاله:

USING SIMPLE PASTE AND MORTAR TESTS RESULTS TO OPTIMIZE SELF CONSOLIDATING CONCRETE

محل انتشار:

سومین کنفرانس بین المللی بتن و توسعه (سال: 1388)

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خلاصه مقاله:

Self consolidating concrete (SCC) is usually proportioned with several mineral and chemical admixtures. A key factor for a successful formulation is a clear understanding of the role of the various constituents in the mix and their effects on the fresh and hardened concrete. In this research a three phase mix design procedure starting from designing the paste and then mortar leading to the design of a stable SCC was adopted. Selection of type and amount of paste ingredients was based on the result of a previous study presented elsewhere. A modified version of Marsh cone test, called FlowCyl, was utilized to quantify the viscosity related property of the paste. Also, using a miniature slump cone the spread diameter of the paste, which is related to its yield stress, was measured. Then, using a reduced size V-funnel and a mini slump cone, the influence of volume of selected paste on the flow behavior of mortar was studied and the mortar suitable for SCC was chosen. In this method if segregation or bleeding occurs in paste or mortar, the mix proportion would be adjusted at the corresponding design phase. Finally, by adding various quantities (volume) of the chosen mortar to the coarse aggregate, the effect of mortar volume on the flow behavior of SCC was studied and an optimized SCC with satisfactory workability was achieved.

کلمات کلیدی:

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