

Utilization of Waste Marble Dust as a Viscosity Modifying Agent in Self Compacting Concrete

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Abstract : Self Compacting Concrete as the name implies--is the concrete requiring a very little or no vibration to fill the form homogeneously. Self Compacting Concrete (SCC) is defined by two primary properties: Ability to flow or deform under its own weight (with or without obstructions) and the ability to remain homogeneous while doing so. Flow ability is achieved by utilizing high range water reducing admixtures and segregation resistance is ensured by introducing a chemical viscosity modifying admixture (VMA) or increasing the amount of fines in the concrete. The study explores the use waste marble dust (WMD) to increase the amount of fines and hence achieve self-compatibility in an economical way, suitable for Pakistani construction industry. The study focuses on comparison of fresh properties of SCC containing varying amounts of waste marble dust (WMD) with that containing commercially available viscosity modifying admixture. The comparison is done at different dosages of super plasticizer keeping cement, water, coarse aggregate, and fine aggregate contents constant.

Keywords : self compacting concrete, waste marble dust (WMD), flow ability, segregation resistance

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