



A Study on Self-Compacting Concrete by Replacing Fine Aggregate and Cement by Foundry Sand and Dolomite Powder

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Abstract : In recent years, Self-Compacting Concrete (SCC) has gained wide use for placement in congested reinforced concrete structures with difficult casting conditions. This project explores the Strength studies of Self-Compacting Concrete by using Foundry sand and Dolomite powder. Foundry sand consists primarily of silica sand, burnt carbon, binder and dust. It can be used to improve the strength and durability properties of concrete. Foundry Sand can be used as a partial replacement of fine aggregates or total replacement of fine aggregate and as supplementary addition. Dolomite powder is obtained by powdering the sedimentary rock forming mineral dolostone which can be used as a replacement material for cement in concrete. Dolomite powder has some similar characteristics as of cement. In the present study, sand is being replaced with Foundry sand and Dolomite powder is chosen as replacement for cement. Viscocrete-20 HE is preferred as super-plasticizer. The Mix design for SCC is arrived using the guidelines of EFNARC. The percentage replacement for foundry sand with sand includes 10%, 20%, 30%, 40% and cement is replaced with dolomite powder for 5, 10 & 15% and tests were performed for all replacement levels for M30 grade concrete at different curing periods.

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