



International Journal of ChemTech Research

CODEN (USA): IJCRGG, ISSN: 0974-4290, ISSN(Online):2455-9555
Vol.10 No.8, pp 772-777, 2017

Experimental Investigation on Concrete Block by Partially Replacing Fine Aggregate with Paddy Husk and Quarry Dust

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Abstract : Sand is naturally defined by size, being finer than gravel and coarser than silt and non renewable resource over human timescale, and sand suitable for concrete is in high demand^{2,4}. The reduction in the source of sand and the need to reduce the cost of construction projects has resulted in the invention of alternative construction materials as fine aggregate. It has been studied that, the quarry dust and Paddy husk are suitable to be used as an fine aggregate^{1,5}. Hence an attempt has been made to study the characteristic properties of concrete block with partial replacement of fine aggregate by quarry dust and Paddy husk with replacement percentage of 10%, 20%, 30%, 40% and 50%. Mix design has been developed for M20 grade concrete design approach using IS for both conventional concrete and concrete with partial replacement. Tests were conducted on concrete blocks to study the strengths and the results were compared with the strength of conventional concrete. The compressive and flexural strength of the concrete blocks were higher than that of the conventional concrete.

Keywords : Quarry dust, Paddy husk, M20 grade, Characteristic Strength.

David Anandaraj.S.L *et al* /International Journal of ChemTech Research, 2017,10(8): 772-777.
