

The Effects of Dry Sludge from Waste Water Treatment Plant on the Compressive Strength of Concrete

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ABSTRACT

One of the objectives of this study was to evaluate an option for waste minimization for the growing production of sludge from waste water treatment plants. Dry sewage sludge was investigated for its potentials by adding this waste product to concrete with Portland cement. This study focused on preparing specimens of concrete with various percentages of sludge from a waste water treatment plant studying the compressive strength and slump tests was conducted for all specimens over certain period of time. The maximum compressive strength of 27.4 MPa was achieved using 5% of dried sludge after 28 days of curing which provided approximately the same strength of reference concrete at the age of 7 days (27.7MPa). The experimental result in this study can be use in certain specific application if use small percentage of dried sludge is added in mix design concrete. The usage of dry sludge in concrete will give better results by increasing the period of curing to obtain the optimum compressive strength of concrete and reduce the water cement ratio to increase strength of concrete.

Keywords: *Dry sludge, compressive strength, concrete, waste minimization, slump*