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EXPERIMENTAL STUDY ON DURABILITY PROPERTIES OF CONCRETE BY USING QUARRY DUST AS PARTIAL REPLACEMENT OF CEMENT

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ABSTRACT

Quarry dust a waste from the stone crushing unit accounts 25% of the final product from stone crushing unit. This quarry dust which is released directly into environment can cause environmental pollution. To reduce the impact of the quarry dust on environment and human, this waste can be used to produce new products or can be used as admixture in concrete so that the natural resources are used efficiently and hence environmental waste can be reduced. Here quarry dust is used for partial replacement of cement in concrete for studying the strength property of concrete. The aim of the experiment is to find the maximum content of quarry dust partial replacement of cement in concrete. The percentages of quarry dust partial replacement of cement in concrete are 0, 10%, 15%, 20%, 25%, 30%, 35%, and 40%. M20, M30, M40 grade concrete cubes of 150x150x150mm size were cast for conducting compressive strength test. From the experimental studies 25% of partial replacement of cement with quarry dust improved hardened concrete properties.

Keywords— quarry dust, crushing, hardness, compressive strength, partial replacement

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