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Mechanical Properties of Steel Fiber Reinforced Concrete with Quarry Dust as a Partial Replacement of Fine Aggregate

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Abstract: *It has been determined that quarry dust can be used as a fine aggregate replacement based on the findings of an experimental inquiry. It has been discovered that substituting quarry dust for fine aggregate at 40% yields the best results. Strength then normal concrete and then decreases from 50%. The compressive strength quantified for verifying percentage and grades of concrete for replacement of sand with quarry dust. This present work is an attempt to use Quarry Dust as partial replacement for sand in concrete along with the steel fibers. Attempts have been made to study the properties of concrete and to investigate some properties of quarry dust reinforced with steel fibers; this article presents the compressive and split tensile strengths of hook end steel fiber reinforced concrete with Quarry Dust. In the experimental work natural sand is replaced by Quarry dust in the proportions of 0%, 30%, and 60%. The hook end steel fibers were used in concrete by 0.5%, 0.75% volume fraction. After conduction of experiments on the cube and cylinder specimens, the results showed that, the incorporation of hook end steel fiber reinforced concrete with 30% Quarry dust for M30 grade concrete.*

Keywords: Steel Fibers, Quarry Dust, Compressive Strength, Split Tensile Strength

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