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EXPERIMENTAL INVESTIGATION ON STRUCTURAL PROPERTIES OF M20 GRADE CONCRETE BY THE PARTIAL REPLACEMENT OF FINE AGGREGATES WITH STONE DUST

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ABSTRACT:

Stone dust is a waste material obtained from crusher plants. The concept of replacement of natural fine aggregate by stone dust which is highlighted in the study could boost the consumption of stone dust generated from quarries. By replacement of stone dust the requirement of landfill area can be reduced and can also solve the problem of natural sand scarcity for future generations. The availability of sand at low cost as a fine aggregate in concrete is not suitable and that is the reason to search for an alternative material. An experimental program was carried out to study the workability and compressive strength of concrete made using stone dust as partial replacement of fine aggregate in the range of 20%, 40%, 60%, and 80%. Workability, Split tensile strength, Flexural strength and compressive strength were determined at different replacement levels of fine aggregate and optimum replacement level was determined based on compressive strength.

Keywords: Compressive Strength, Flexural strength, Low cost, Stone Dust, Tensile strength, Workability.



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