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An Experimental Investigation on the Steel Fiber Concrete by Partial Replacement of Tio_2 and Quartz Powder

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Abstract: *K Concrete is a building material widely used in the world for every construction project, and this construction projects consists of every possible challenge in terms of durability, exposure to various reactive substances and at a place where concrete needs to be high strength. the concrete is a mixture which is of heterogeneous aimed to solidify and produce strength based on the quality and composition of materials used in the concrete. in this study we are performing an experimental investigation to see whether there is any possible increase in the strength of nominal concrete to change to high strength concrete, In order to achieve this high strength we have used materials like steel fibres, TiO_2 as partial replacement for cement, quartz powder as partial replacement of fine aggregate. We have performed several tests on materials, fresh concrete, and hardened concrete. We have also reviewed the previous works of the researches performed on the similar projects with the related materials. we have used a varied percentages of material ratios as 10%, 20%, 30%, 40%, 50% of quartz powder partially replacing fine aggregate, and 0%, 0.5%, 1.0%, 1.5% of TiO_2 as partial replacement of cement, and 0%, 0.5%%, 1%, 1.5%, 2% of steel fibres addition to concrete.*

Keywords: Ground Granulated Blast Furnace Slag, Titanium Dioxide, Compressive, Split Tensile Strength

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