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EXPERIMENTAL INVESTIGATION ON STRENGTH CHARACTERISTICS OF GRAPHENE CONCRETE

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ABSTRACT: Graphene Oxide is typically produced via the chemical oxidation and exfoliation of graphite. Graphene Oxide is a recently invented 2D Nano plane fiber. The hydration properties of Graphene Oxide-cement composites have been found to result in a higher hydration rate, which affects both the water demand and workability of the composites. It contains active functional groups on its nano plane surface, and these groups play a major role during the cement hydration process. Based on the literature survey some authors have also reported that reinforcing the cement matrix with Graphene Oxide results in the formation of calcium silicate hydrate gel in the micropores, thereby enhancing the resultant composite's mechanical properties. Markedly few studies have examined the durability of Graphene Oxide-cement-based composites. In this project work Graphene Oxide, which is used in the partial replacement of cement is 0.1%, 0.3% and 0.5% to produce a better performance concrete. The various tests like compression, split tensile test were done in order to compare the mechanical properties with conventional concrete.

Keywords: 2D Nano plane fiber, Calcium Silicate Hydrate, Graphene Oxide (GO)

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