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Effect of graphene oxide nano powder in cement composites

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Many attempts have been made to improve the performance of cement based materials – by manipulating the properties with admixtures, supplementary cementitious materials, and fibers. In this paper, we propose the use of graphene oxide Nano powder in concrete to develop the physical properties that can be used in structural applications. This article aims to find out the optimum composition of graphene oxide Nano powder required to achieve maximum compressive and flexural strength of concrete. Preliminary results showed that when graphene oxide (GO) is mixed with cement, its mechanical strength is improved. Furthermore, cross-sectional image analysis using Field Emission Scanning Electron Microscopy (FE-SEM) shows homogenous distribution of graphene powder, crystals and hydration products inside the cement mortars.

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