

عنوان مقاله:

Nano-SiO₂ and polypropylene fibers Optimization for Compressive strength of concrete using edge design method

محل انتشار:

چهارمین کنفرانس بین المللی پژوهشهای کاربردی در علوم شیمی و زیست شناسی (سال: 1396)

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خلاصه مقاله:

Research has shown that the use of Nano scale has led to increased quality and strength of concrete. Given the fact that researchers are paying particular attention to the use of nanotechnology in the concrete industry they have taken a new approach to the construction industry. In this regard 12 mixing designs with different amounts of these additives with three types of cement strength classes (525, 425 and 325) and 9 cubic samples (10×10×10) were designed and tested for compressive strength. The purpose of this paper is to investigate and compare the compressive strength of samples containing Nano silica and polypropylene fibers and the ratio of water to cement ratio to each other in order to achieve maximum strength by checking the vertex method and its ability to find the highest compressive strength has been evaluated. The results show that Nano silica particles have a greater effect on compressive strength compared to fibers. In this study for the production of high strength concrete the use of Nano silica is due to the positive interaction that occurs between the cement pulp and its beads. The findings also show that using higher resistivity cements could result in better strength results especially in designs involving Nano silica particles

کلمات کلیدی:

Compressive Strength, Nano silica, Fiber, Vertex Method

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