

عنوان مقاله:

The Influence of a type of Fibres on Fly Ash Concrete

محل انتشار:

نخستین کنفرانس بین المللی بتن (سال: 1388)

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خلاصه مقاله:

Results of experimental investigation carried out to study the effects of addition of natural san fibres on the fracture toughness and impact strength of high-volume fly ash concrete are presented in this paper. San fibres belong to the category of 'Natural Bast Fibres', also known as 'Sunn Hemp'. Its scientific (botanical) name is *Crotalaria Juncea*. It is mostly grown in the Indian Sub- Continent, Brazil, Eastern and Southern Africa, and in some parts of the U.S.A. Initially, a control mixture without fly ash was designed. Then, cement was replaced with three percentages (30, 40 and 50%) of low-calcium (Class F) fly ash. Three percentages of san fibres (0.30, 0.60 and 0.90%), having 25 mm length, were used. Tests were performed for compressive strength, fracture toughness, and impact strength at the ages of 28 and 91 days. The test results indicated that the replacement of cement with fly ash decreased the compressive strength and fracture toughness, and had no significant effect on the impact strength of plain (control) concrete. Addition of san fibres did not affect significantly the compressive strength, increased the fracture toughness and impact strength of high-volume fly ash concrete as the percentage of fibres increased.

کلمات کلیدی:

Fly Ash , Fibre , Reinforced , Concrete

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