

عنوان مقاله:

Experimental evaluation of impact strength of cementitious composite by partially replacement cement with Fly Ash class F

محل انتشار:

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خلاصه مقاله:

Fly Ash is an inorganic, non-combustible by-product of coal-burning power plants which most commonly used as a supplementary cementitious material in the construction industry. Chemical and physical characteristics of fly ash are similar to cement, which allows it to be used in concrete in place of cement. The primary aim of this research is to determine the optimal amount of adding fly ash as a replacement of cement and its effects on the mechanical properties of cementitious composite. This paper presents the results of an experimental investigation carried out to evaluate the mechanical properties (compressive, split tensile, flexural and impact strength) of cementitious composite in which cement was partially replaced with three percentages (15%, 25% and 50%) Fly Ash class F by weight. Impact study was conducted by means of gas gun test method to evaluate the properties like impact energy absorption, penetration depth, crater diameter and scabbing. Test results indicate significant improvement in the long-term strength properties of cementitious composites by the inclusion of Fly Ash in place of cement but it could be effectively used to enhance the damage tolerance of experiments in terms of reduction of micro cracking and scabbing crater in lower amounts. Moreover incorporation of fly ash in cement matrix improves the workability and durability.

کلمات کلیدی:

Impact load, Cementitious composite, Fly Ash, Penetration, Scabbing

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