

STRENGTH ASSESSMENT OF FLY ASH CONCRETE WITH WATER CONTAINING SODIUM HYDROXIDE

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ABSTRACT

This paper presents the effect of sodium hydroxide (NaOH) present in the curing water on the strength of fly ash cement concrete (FACC). The concrete is produced by mixing of % replacement of cement by fly ash and curing water containing NaOH of 5% concentration with constant dosages. This research work describes the feasibility of using the fly ash (Class-F) in concrete production as partial replacement of cement by weight. The cement has been replaced by fly ash accordingly in the range of 0% (without fly ash), 10%, 20%, 30% and 40% by weight of cement for M-25 mix. The compressive strengths were evaluated for 56 days of normal curing and 28 days normal + 28 days 5% NaOH contain water curing. The results show that, the compressive strength of fly ash cement concrete (FACC) has come down with an increase in the % replacement of cement by fly ash with constant dosages of 5% concentrated NaOH solution at 56 days. Compressive strengths of fly ash Cement Concrete (FACC) have decreased in the range of 3.03 to 33.89%, when compared with the control specimens. By using Regression Models the ratio between the experimental compressive strength value and the Regression Models predicted values can be compared.

KEYWORDS: Fly Ash Cement Concrete, Compressive Strength, Regression Models, Sodium Hydroxide