TEMPERATURE EFFECTS ON ELASTIC PROPERTIES OF FLY ASH CONCRETE

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ABSTRACT

This research was carried out to evaluate performance of concrete produced, placed, and cured under hot weather conditions normally followed in this country as well as other countries. Concrete properties of concrete were measured under simulated hot and dry weather conditions. The properties determined were compressive strength, tensile strength, and secant modulus. Two different types of concretes (A and B) proportioned to have 28-day compressive strength of 2500 and 4500 psi (17 and 31 MPa), were used in this investigation. The mechanical properties were measured at three different temperatures of 73, 95 and 120F (23, 35 and 49^{o}C) and four levels of fly ash (0,10,20 and 30 percent cement replacement). Analysis of test data revealed that the optimum quantity of fly ash varied between 10-20% by weight with respect to compressive strength, tensile strength, and secant modulus depending upon type of concrete, test temperature and age.

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