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THE COUPLED EFFECT OF TEMPERATURE AND MOISTURE ON FRESHLY CASTED CONCRETE (FCC), IN HOT WEATHER, PART I

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ABSTRACT

Concreting in hot weather requires an understanding the effects of environmental factors, high air temperature, wind velocity and low relative humidity, any combination of these factors affects property and quality of fresh or hardened concrete. The present study devoted to propose a theoretical model describing the heat transfer and mass transport occurring in convective conditions in a hot weather. We are interested in the effect of temperature and moisture on the progress and distribution of evaporation which affects the concrete, many physical effects must be considered: fluid flow, heat transfer and transport of participating fluids and gases. The validation of the model will represented in the next paper in the part II of modeling of the effect of temperature and moisture on freshly casted concrete (FCC),In hot weather.

Keywords: Weather, Environment, moisture, Theoretical model, Fcc.