

The Importance of Water Temperature and Curing Conditions on Concrete Curing

Authors : Ahmad Javid Zia, Abdulkerim Ilgun, Suleyman Kamil Akin, Mustafa Altin

Abstract : Curing conditions that help concrete, which is one of the most widely used building materials in construction sector, gain strength today is one the important issues. In this study the varying concrete strength depending on water temperature at curing stage is investigated through tests at laboratory. At laboratory the curing conditions has been determined according to both TS EN 12390-2 and regular construction site while performing the experiments on specimens. Five samples have been taken from concrete and cured under five different curing conditions and the compressive strength results of concrete specimens have been compared. One of these five curing conditions has been prepared accordance with TS EN 12390-2, the sample cured at 20 ± 2 °C and accepted as reference samples. Two of the remaining sample groups have been cured in 5 ± 2 °C and 15 ± 2 °C and the other two have been cured outside of the laboratory. One group of the samples which have been cured outside has been watered twice a day and the other group has not been watered at all. The experiments have been carried out on 150x150x150 mm cube samples of C20 (200 kg/cm²) and C25 (250 kg/cm²). 7 and 28 days compressive strength of specimens have been measured and compared.

Keywords : concrete curing, curing conditions, water temperature, concrete compressive strength

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