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Effect of Silica Fume with Hydrated Lime on Compressive Strength and Carbonation Rate of C25 Concrete

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ABSTRACT

In this study 11 different combinations of micro fly ash and calcium oxide were replaced instead of cement. Fly ash with 5%, 10%, 15% and 20% of cement and calcium oxide with 5%, 10%, 15% and 20% of cement and then a combination with fixed 15% fly ash and 5%, 10% and 15% of calcium oxide are replaced instead of cement. Then 108 sample of cubic concrete have been prepared and samples at the ages of 7, 28 and 56 days were applied compression strength and ultra sound tests and results were recorded and compared. According to the results, the samples had the best results at 56 days. The reason for the good results at 56 days was the entry of pozzolan into the system and its reaction with calcium hydroxide resulting from the hydration reaction.

Keywords:

Fly ash, Calcium oxide, Compression strength test, Ultra sound test, Pozzolan.