

Production of high-performance silica fume concrete

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Abstract

This research aimed to produce concrete that will decrease disadvantages of portland concrete and resolve it. Mixture of Silica fume with concrete in this paper shows that the strength and hardness are increased. In this research the main goal is to compare the difference of compressive strength between standard concrete and concrete with silica fume with different additives ratio and to explore its effect on the main physical properties of concrete. To achieve our goals in this research about 180 samples prepared to examine its compressive strength, all concrete samples have the same mixing ratio and distributing to standard and Silica fume added by the volume (5, 10, 15, 20 and 30%). The results show that the recommended addition was 15% of Silica fumes for optimum compressive strength that reaches 74.8 MPa. Also the economy of mixture compared to the market prices makes silica excellent to use as addition filler to concrete.