

# **INFLUENCE OF ADDITION OF SILICA FUME AND FLY ASH ON STRENGTH ASPECTS OF HIGH PERFORMANCE CONCRETE**

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## **ABSTRACT**

A test program has been carried out to study the effect of silica fume and fly ash on strength aspects of high performance concrete. A set of 24 different concrete mixtures were cast and tested with different cement replacement levels (0%, 10%, 20% and 30%) of fly ash with silica fume as addition (0%, 2.5%, 5%, 7.5%, 10% and 12.5% by weight of cement) for each trial. Super plasticizer has been added at different values to achieve a constant range of slump for desired workability with a constant water-binder (w/b) ratio. Based on the test results the influence of such admixtures on strength aspects were critically analyzed and discussed. A statistical model has been developed to relate compressive strength with flexural and split tensile strengths.

**KEY WORDS:** Fly Ash, Silica Fume, High Performance Concrete, Compressive Strength, Flexural Strength, Split Tensile Strength.