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## High Volume Fly Ash Concrete: The Practical Impact of Using Superabundant Dose of High Range Water Reducer.

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### Abstract

The practice of using extraordinarily low water/binder ratio for high volume fly ash (HVFA) concrete mixes in order to realize adequate early strength is prevalent. Generally, superabundant dose of high range water reducer (i.e. superplasticizer) is required to make such mixes workable. The relationship between superabundant superplasticizer dose and various HVFA concrete properties is thus examined in this research work. Three groups of HVFA concrete mixes were designed for this purpose. Each group consisted of 3 mixes. Except for superplasticizer dose, the proportion of materials in the three group 1 mixes were the same, each mix containing 50% fly ash as replacement for cement. Of the three mixes, one contained maximum superplasticizer dose at 2% of binder by mass, the second contained superabundant dose at 3% while the third contained 4% dose. Group 2 and 3 mixes were similar to those of group 1 except that they contained 60% and 65% fly ash content respectively. Fresh concrete tests performed on the mixes included flow table and slump

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