

**EFFECTS OF WATER TO CEMENTITIOUS RATIO ON COMPRESSIVE  
STRENGTH OF CEMENT MORTAR CONTAINING FLY ASH**

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**ABSTRACT**

This study was directed toward studying performance of ASTM Class C and F fly ashes in mortars under varying water to cementitious materials ratio. Four different basic mixtures were proportioned. These mixes were proportioned to have cement replacements in the range of 20 - 40 percent by the weight of fly ash. For each basic mix, water to cementitious materials ratio varied between 0.25 - 5.0. An ASTM Type I Portland cement obtained from one source was used in all the tests. Mortar mixes containing 20% Class C fly ash exhibited better results than that shown by both the control mix as well as other mixes containing Class F fly ash. The optimum water to cementitious materials ratio (weight of water divided by total weight of cement plus Class C or Class F fly ash) was found to range between 0.35 and 0.6 for mixes tested in this investigation.