

HIGH EARLY STENGTH FLY ASH CONCRETE FOR PRECAST/PRESTRESSED PRODUCTS

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ABSTRACT

Presents field applied research to report the advantages of using a high-quality ASTM C-618 Class C fly ash on water demand, workability and compressive strength of concrete. The research was performed at two precast/prestressed concrete plants to identify optimum mixture proportions for production of high-early strength concrete with high fly ash contents. Tests were carried out on nominal 5000 psi (34 Mpa) concrete utilizing fly ash produced at Wisconsin Electric Power Company's Pleasant Prairie Power Plant. Fly ash replacement improved workability, decreased water demand, and increased strength while maintaining the high-early strength requirements of precast/prestressed operations.