

Mechanical Properties of Class F Fly Ash Blended Concrete Incorporation with Natural Admixture

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Abstract : This research work revealed that effect of Natural admixture (NAD) on Conventional Concrete (CC) and Class F Fly Ash (FA) blended concrete. Broiler hen egg white albumen and yellow yolk were used as Natural Admixture. Cement was replaced by Class F fly ash at various levels of 0%, 25%, 35%, 45% and 55% by its mass and NAD was added to concrete at different replacement dosages of 0%, 0.25%, 0.5%, 0.75% and 1.00% by its volume to water content and liquid to binder ratio was maintained at 0.5. For all replacement levels of FA and NAD, the mechanical properties viz unit weight, compressive strength, splitting tensile strength and modulus of elasticity of CC and Class F fly ash (FA) were studied at 7, 28, 56 and 112 days. From the results, it was concluded that 0.25% of NAD dosage was considered as optimum dosage for both CC and class F fly ash blended concrete. The studies revealed that 35% Class F fly ash blended concrete mix is concluded as optimum mix and 55% Class F fly ash blended concrete mix is concluded as economical mix with 0.25% NAD dosage.

Keywords : Class F fly ash, compressive strength, modulus of elasticity, natural admixture, splitting tensile strength, unit weight

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