O 2. MECHANICAL BEHAVIOR OF ENGINEERING CEMENTITIOUS COMPOSITES (ECC) CONTAINING FLY ASH AT HIGH RATE

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ABSTRACT: Usage of waste materials in construction sector has made it possible to produce surplus amount of economical materials with less use of energy. The fly ash obtained from thermal power plants is an industrial waste material and causes significant environmental pollution. For this reason, depleting of fly ash tend to become incontrovertible obligation in various areas in industry. The use of fly ash as additives in concrete production processes due to its pozzolanic properties, increases the importance of this waste materials in terms of reducing the energy and environmental pollution required to produce cement. In this study, Engineering Cementitious Composites (ECC) has been designed by utilizing fly ashes with classification of F and C according to ASTM standards which has been obtained from different thermal power plants in Turkey. While designing of composites, four different mixtures were acquired by using two different types of fly ash (F and C) in two different orientations (FA / C = 1.2 and 2.2). Consequent to compressive experiments at specific ages 3, 7 and 28 days, the strengths of the samples formed using F class fly ash were higher than those of samples prepared using C class of fly ash therewithal. At the same time, F class fly ash had a positive contribution on workability of composites.

Keywords: cementitious composites, fly ash, pozzolanic materials