

Study of Fly Ash Geopolymer Based Composites with Polyester Waste Addition

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Abstract : In the present work, fly ash geopolymer based composites including polyester (PES) waste were studied. Specimens of three compositions were prepared: (a) fly ash geopolymer with 5% PES waste, (b) fly ash geopolymer mortar with 5% PES waste, (c) fly ash geopolymer mortar with 6.25% PES waste. Compressive and bending strength measurements, water absorption test and determination of thermal conductivity coefficient were performed. The results showed that the addition of sand in a mixture of geopolymer with 5% PES content led to higher compressive strength, while it increased water absorption and reduced thermal conductivity coefficient. The increase of PES addition in geopolymer mortars resulted in a more dense structure, indicated by the increase of strength and thermal conductivity and the decrease of water absorption.

Keywords : fly ash, geopolymers, polyester waste, composites

Conference Title : ICCEMS 2015 : International Conference on Civil Engineering and Materials Science

Conference Location : Venice, Italy

Conference Dates : April 13-14, 2015