

Mechanical Properties of Steel-making Slag Reinforced Polyester Composites

Isiaka Oluwole Oladele

Department of Metallurgical and Materials Engineering, Federal University of Technology, Akure, Ondo State, Nigeria.
African Materials Science and Engineering Network (AMSEN): A Carnegie-IAS (RISE) Network
E-mail: wolesuccess2000@yahoo.com

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Abstract: *In order to assess the viability of utilising steelmaking slag for reinforcing polyester matrix to form composites with improved mechanical properties, slag was obtained from an indigenous steel production plant and prepared by crushing and pulverizing. This was followed by sieving into 75, 106 and 300 μm sizes and, varied masses of the particles were used to develop the composites by reinforcing the unsaturated polyester resin with the steelmaking slag particles. The homogeneous mixtures were poured into the flexural and tensile tests moulds and allowed to cure before being stripped from the moulds. The samples were further allowed to cure for 30 days before carrying out the mechanical tests. The results showed that the composites produced have indeed gained increment in these properties compared to the unreinforced polyester material. The optimum results were obtained from the use 106 μm and 2 wt% slag particles.*

Keywords: *Steelmaking slag, reinforcement, composites, mechanical properties.*