

Recycling Carbon Fibers/Epoxy Composites Wastes in Building Materials Based on Geopolymer Binders

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Abstract : Scraps deriving from the production of epoxy-carbon fibers composites have been recycled as a reinforcement to produce building materials. Short chopped fibers (5-7 mm length) have been added at low volume content (max 10%) to produce mortars. The microstructure, mechanical properties (mainly flexural strength) and dimensional stability of the derived materials have been investigated. Two different types of matrix have been used: one based on conventional Portland Cement and the other containing geopolymers formed starting from activated metakaolin and fly ashes. In the second case the materials is almost completely made of recycled ingredients. This is an attempt to produce reliable materials solving waste disposal problems. The first collected results show promising results.

Keywords : building materials, carbon fibres, fly ashes, geopolymers

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