



WASTES USED IN OBTAINING POLYMER COMPOSITE

Marinela Bărbuță¹, Nicolae Țăranu¹, Maria Harja^{2*}

¹*“Gh. Asachi” Technical University of Iași, Faculty of Civil Engineering and Building Services, 43 Mangeron Blvd., 700050 Iași, Romania*

²*“Gh. Asachi” Technical University of Iași, Faculty of Chemical Engineering, 71 Mangeron Blvd, 700500 Iasi, Romania*

Abstract

In the paper is analyzed the possibility of using some industrial wastes for obtaining new building materials. From the industry or from the power station a lot of by-products or wastes have resulted and their storage is a big problem for the environment. In the building material industry a part of these wastes can be used in different ways: for replacing the cement, as addition in concrete, as component of cements, in the mixture of polymer concrete, etc.

In the present investigation, a series of polymer concretes with wastes were prepared. In the first and second polymer concrete mixtures, fly ash and silica fume were used as addition near the natural aggregate as fine part (filler). In the third mixture the steel slag was used as aggregate. The microstructure and the mechanical properties such as: compressive strength, flexural strength and split tensile strength were analyzed and compared. The maximum values for all experimental strengths were obtained for polymer concrete with slag aggregate.

Key words: epoxy resin, fly ash, polymer concrete, silica fume, steel slag aggregate

* Author to whom all correspondence should be addressed: e-mail: maria_harja06@yahoo.com