

Behavior of Polymeric Mortars: An Analysis from the Point of View of Application in Severe Conditions

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Abstract : This present work was aimed to develop polymeric mortars having as binder two polyester resins namely isophthalic and orthophthalic polyester. The inorganic phase was composed by medium-size river sand and fly ash filler, a by-product of the burning of coal in power plants. The compositions in this study are high performance mortars and were assessed by mechanical properties, through compressive strength and flexural strength, by durability strength when exposed to the cyclical variation of temperature from -400C to +300C and by the chemical aggression test. The composites displayed good performance when exposed to cyclical temperature variations and chemical solutions. The mechanical strength values reached the 100 MPa, the flexural strength yielded values of about twenty percent of mechanical strength.

Keywords : polymer mortar, mechanical strength, cyclical temperatures, chemical strength, sustainability

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