Mechanical Properties of Epoxy Resins Filled with Waste Rubber Powder

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A material usage of waste rubber powder in the polymeric composites increases their significance. Material recycling is very important ways of dealing with waste. The paper deals with laboratory tests of polymeric particle composites based on the waste – rubber powder which was gained as one of outputs of a recycling line. The paper describes mechanical properties of these composite systems such as: hardness (Shore D, Brinell), tensile strength (cohesive strength of filled epoxy resins) and it is also focused on the lap-shear tensile strength in the boundary adherend. Adding waste rubber powder into the epoxy resins and into other plastics materials and adhesives is a way for the material recycling which is inexpensive and sensitive to the environment. The inclusion of filler lead to the fall of lap-shear tensile strength values with an increasing amount of filler and to stabilizing on the level 5-20 vol.% filler in the epoxy matrix.

Keywords: Hardness, Lap-shear tensile strength, Recycling

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