Changes of Polyurethane Mechanical Properties Filled with Glass Powder

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Polyurethanes belong to a wide group of polymers which are applied in many industrial branches. Some polyurethanes can be filled with various types of fillers which optimize their properties for given application. In the paper there are described basic mechanical properties of a constructional two-component polyurethane resin which was filled with microparticles of a glass powder. The aim of the experiment is to define a resulted hardness, a tensile strength and a shear strength of the filled polyurethane resin and set its utility properties further to an application usage of a company PSP Izoterm Ltd. From the measured values 14% increase of the hardness of the filled systems compared with the unfilled resin is visible, the shear strength of the filled systems did not differ statistically significantly from the unfilled polyurethane, the tensile strength of the polyurethane filled with 5% of the glass powder was statistically the same with the strength of the unfilled polyurethane.

Keywords: hardness, shear strength, tensile strength

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