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Investigating the Effects of Injection Molding Parameters on the Mechanical Properties of Recycled Plastic Parts Using the Taguchi Method

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Abstract

The growing amount of plastic parts produced nowadays makes the search for alternatives in recycling and the further use of these nonbiodegradable materials imperative. The degradation of the mechanical properties of recycled plastic products poses the

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principal experiment. By adopting L₉ Taguchi OA, the parts made from recycled plastic

were produced by injection molding. ANOVA confirms that the most significant factor for flexural modulus of a recycled toolbox tray is injection time (~40.49% percentage contribution). For stress at yield, the most significant factor is melt temperature with percentage contribution of about 43.34%.

Keywords: Flexural modulus Injection molding Recycled plastic Simulation Stress at yield Taguchi method

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