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Investigation of the Influence of Processing Parameters of 2-Components Injection Molding on Adhesion at the Interface Thermoplast-TPE

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A non-functionalised materials combination and a partly functionalised materials combination have been used to evaluate the influence of melt and mold temperature, injection speed, the first and the second cooling time and two different connection geometries on the bond strength of the composite of two-component injection molded components. The mechanical properties of the composites have been determined. By using the analysis of the fractured surfaces and the results of the mechanical tests it was possible to clarify the dependence of the processing parameters on adhesion quality. A model was proposed to explain the influence of the connection geometry on the bond strength of the composite. The results of this research should establish a better understanding of the dependency of process management of the injection molding parameters on the resulting connection quality of the composite by functionalised and non-functionalised materials.