



INFLUENCE OF MULTIPROCESSING ON RHEOLOGICAL AND APPLICATION PROPERTIES OF PP BASED WPC

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Two different mixtures of the WPC composites was polypropylene matrix were used to investigate the influence of multiprocessing in a single screw extruder. This research was aimed to compare the properties of market available WPC with self elaborated composite; both materials were low-filled, the content of wood flour was in both cases 20 wt. % and the matrix polymer was an isotactic polypropylene. The mechanical and rheological properties were determined after each processing cycle. Rheological measurements were performed by means of capillary rheometer. Two basic effects can be observed after following processing cycles. First one, due to degradation of the polymer matrix, cause an increase of the mold flow index, changes of the flow conditions in the extrusion process, and a decrease of the strength and other mechanical properties of the composite. A second statement leads to a conclusion that the level of homogenization of the WPC increases, thus results in enhanced mechanical properties after every next processing. The main task of the analysis of this research is to describe these two main processes and to determine the relationships of investigated properties thus, the processing dependence of rheological and application properties.