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Development of wood-thermoplastic pellets made of starch adhesive to injection molding

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Abstract

The techniques of conformation of pellets of thermoplastic-wood composite involve the use of extrusion machines or hot mixers. However, the manufacturers of wood dust can not afford such expensive equipment, so this work shows the possibility of cold conformation of pellets of plastic wood with the help of an adhesive based on starch and sodium hydroxide (NaOH). The adhesives were prepared with 10, 15 and 20g of soluble starch for each 100mL suspension. Then, the adhesives were mixture with 30% of sawdust and micronized LDPE. Laboratories tests were performed evaluating Melt Flow Index and mechanical characterization in the compounds, as well as testing of injection molding, which indicated that the material has great potential to be used, since the resistance increases with the concentration of starch in the adhesive and with the amount of adhesive in the compound.

Keywords: *wood-plastic, LDPE, composite, starch adhesive, injection molding*
