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Flow Properties of Wood Powder-Plastic Mixture I.
Understanding of flow properties by capillary flow tests

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Abstract: In order to study the flow properties of wood powder-plastic mixture with a high proportion of wood powder, flow tests using capillaries of various sizes were performed. After starting to load, the mixture did not flow for a while but was only compressed. When the load increased to some extent and the mixture started to flow, a yield point of load was observed. As the mixture began to flow out continuously, flow resistance of the mixture and load generally balanced and a dynamic equilibrium state appeared. A high correlation was observed between yield load and dynamic equilibrium load. By using capillaries of various sizes, extrusion molded material with greatly differing bulk densities and surface characteristics was obtained. As for the surface characteristics, the same phenomenon as the defective molding called melt fracture in plastic molding was observed.

Keywords: wood powder-plastic mixture, flow property, capillary flow test, extrusion molded material

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