Confection and Evaluation of Properties of Polyurethane Plaques with Waste Recovery from Surfboard Fabrication

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Abstract:

This study allowed information to be obtained regarding the most important aspects which affect the production process of polyurethane (PU) surfboards in Florianópolis, Santa Catarina State, Brazil. It was observed that the main residue from the production process is PU solid waste. The intended reuses of this solid residue as raw material for the manufacture of new polyurethane sheets for making surfboards. Polyurethane sheets were prepared by incorporating different percentages of the PU waste collected, with two particle sizes (9 mesh and crude), into the matrix. The results showed that the mechanical properties the tensile strength of the sheets are influenced by the particle size and the percentage of PU incorporated. The degradation of the material begins at 200 oC and thus this material is stable in environmental temperature for use surfboards. Finally, in addition to the experimental results, it is noted that the production process of surfboards in Santa Catarina has sought ways to reuse their waste, aiming at cleaner production.

Keywords: Productive process. Polyurethane. Waste. Recycling.