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Basic mechanical analysis of biodegradable materials

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Abstract. The field of polymeric materials and manufacturing technologies is constantly evolving, offering the possibility to prototype 3D products in a responsible and ecological way, thus aiming to replace on a large scale the filaments of nonbiodegradable synthetic polymers (from fossil resources) with filaments of biodegradable materials, obtained from renewable resources. The paper supports the development mentioned above and follows to characterize biodegradable materials from the mechanical behaviour point of view, tensile, bending, and impact tests. Also, the study reflects the influence of the technological parameters on the tensile test obtained results and also aims to optimize the obtained results. The studied materials were Extrudr Green-TEC Anthracite and Extrudr BDP Pearl, which according to the obtained basic mechanical results can successfully replace conventional polymers such as Flexible, HIPS, PP and other ones.

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