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ANALYSIS OF NATURAL FIBER MATERIALS WITH EPOXY MATRICES IN THE AEROSPACE SECTOR.

Abstract

The use of synthetic composite materials generates a high level of health risk in the aerospace industry; to reduce their usage, it is intended to promote natural composite materials that exhibit equivalent physical properties with lower toxicity. This project examines the performance of coconut fibers, henequen fibers, and jute fibers combined with an epoxy resin matrix to build a high-power rocket and a cansat-type payload under ASTM standards. The results suggest a dependence on the configuration and orientation of the fabric, which together create stress concentration nodes in each layer that cover a wide area, giving natural fibers properties similar to synthetic ones.