Effect of Use of Palm Sugar Fiber Composite on Impact Resilience and Tensile Strength

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ABSTRACT

This research was conducted to determine the results of the comparison of tensile strength and impact toughness of palm fiber fibers. Palm fiber is a strong and resilient fiber and is often used by the community as a rope because of its strength. In making composite specimens consis t of 2 matrix compilers and reinforcemen. The production of specimens is carried out by the method of straight fiber direction and free fiber dimensions using variations in fiber weight, and continued with tensile testing and impact testing. The results of the test produced the highest average strength value of the specimen with a variation of 0.50 gr which is 311.59 (σ) (N / mm2) with an average strain value of 0.11 (ε) (mm / mm), for the value the lowest average is in the last specimen with a fiber variation of 0.75 grams ie 213,06 (σ) (N / mm2) with an average strain value of 0.14 (ε) (mm / mm). The results of the impack test carried out resulted in the highest average value of absorbed energy in the fiber variation of 0.75 gr which is 28.124 (J) and the average value of the impack price is 0.427 (J / mm²), for the lowest absorbed average energy value in the variation of 0.25 gr which is 22.712 (J) while for the average value of the impack price is 0.353 (J / mm²). For the tensile test, the more fiber is given, the lower the value produced, while for the impact test the more fiber is given, the higher the value.

Keywords: Palm fiber, Matrix, Specific grafity, Stress-strain