

## **Investigation of Compression, Flexural, Impact, Hardness, Density Characteristics of Composites Reinforced With Coir, Corn Fibers**

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### **Abstract**

This work investigated the combination of 20 wt.% of natural fibers (coconut coir fiber and corn silk) with 80 wt.% of unsaturated polyester resin. The coir and corn fibers were washed and dehydrated by sunlight and then treated with an alkali solution after that, they dried for 20 minutes at 60°C in the furnace to reduce the moisture content. Grinding and sieving processes are carried out to attend to a particle size of 0.9 mm. The natural fiber-reinforced polymer (NFRP) composites were manufactured at room temperature through an open glass mold. The mechanical properties of coconut coir fiber reinforced polymer (CCFRP) and corn silk fiber reinforced polymer (CSFRP) composites are evaluated using compression, flexural, impact, and hardness according to ASTM standards D695, D790, D256, and D2240, CCFRP composite shows higher properties than CSFRP composite with 25%, 24.324%, 20%, 3.703% respectively. The CSFRP composite shows a higher density than the CCFRP composite with a percentage of 2.895%.