

Effect of Lamination on Albazia Wood Waste On Electric Bicycle Frame Against Compression Test

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ABSTRACT

Bicycles are the most popular means of transportation. In addition to being environmentally friendly, bicycles are also a means of exercise. Along with the development of the times, the means of transportation are now increasingly developing into electric bicycles. In the development of this means of transportation, there are also many new innovations such as the bicycle frame. Bicycle frames that initially used metal materials have now undergone a lot of material changes, such as using wood. In this research, the material used is albazia wood which is laminated. This wood laminate aims to strengthen the texture of albazia wood. Albazia wood used as a bicycle frame this time uses a layer thickness ratio. The thickness of this layer uses two variations, namely 2 mm and 3 mm layers. The test results on these two frames are dominantly stronger in the 2 mm layer variation which has a compressive strength result of 2.65 kg/cm² and the 3 mm layer has a 2.52 kg/cm² result. After undergoing the finishing process, the compressive strength decreases, but the 2 mm frame still has a higher yield than the 3 mm frame, which is 2.29 kg/cm² and the 3 mm frame has a yield of 2.17 kg/cm². In this study it can be concluded that the thickness of the layer is a reference.

Key word: Bicycle, electric bicycle, wood, layer, compressive strength laminate