

SUMMARY

Pradana Wijaya, Department, of Mechanical Engineering, Faculty of Engineering, University of Brawijaya, December 2016, *The Effect of Woven Angle and Pressure Variation on Tensile Strength in Manufacturing Natural Fiber Laminate Composite*, Academic Supervisor : Anindito Purnowidodo and Sofyan Arief Setyabudi.

Composite Materials was a combination of two material have different phase later and become a new material and having the property better than them .Usually composite consisting of two main sections namely the matrix serves as a binder , adhesive or master and filler or known as filler as an amplifier or retaining the main composite burden .Natural fiber composite are composite with a filler of by natural .With some treatment given on a natural fiber , the composite himself can vary with expected to be alternative to use composite environment friendly.

In this study, pressure process on manufacturing natural fiber composite with variation woven angle ($0^{\circ}/90^{\circ}$ and $45^{\circ}/45^{\circ}$). With pressure given of, 20 N/mm^2 , 40 N/mm^2 and 60 N/mm^2 , also a long pressure given of, 10 seconds, 15 seconds, 30 seconds to knowing pressure effect on tensile strength composite.

Result show that pressure effect with angle composite $0^{\circ}/90^{\circ}$ with pressure 40 N/mm^2 have maximum tensile strength on long pressure constan at 15 seconds of 34.389 N/mm^2 while angle composite $45^{\circ}/45^{\circ}$ have maximum tensile strength on 60 N/mm^2 pressure of 31.671 N/mm^2 . Then to a long variation pressure on angle composite $0^{\circ}/90^{\circ}$ have maximum tensile strength on 30 seconds of 39.792 N/mm^2 , while composite with an angle $45^{\circ}/45^{\circ}$ have maximum tensile strength on 15 seconds a long pressure of 33.728 N/mm^2 .

Keywords : Composites, Woven Composite, Laminate, Natural fiber, Pandan Leaf Fiber, Tensile Strength