ABSTRACT

The objective of this research is to know the influence of alkali concentration to the strength of shear interface of palm fiber fiber with polyester matrix, to know the effect of immersion time on the strength of sheathing of fiber palm fiber interface with polyester matrix, and to know the failure characteristics of composite fiber palm fiber test result with polyester matrix .

The materials used in this research are palm fiber fibers, polyester, catalyst, alkali (NaOH). The tools used in this study are digital scales, microscopes, Image J software, delimiters, macro photo cameras, prints, electric drill, tensile testing machine, scanning electron microscopy (SEM). The result data from mechanical testing is presented in graphical form and analyzed by comparing it with similar research results.

Overall of the graph of the relationship between immersion time and alkali concentration (NaOH) to strong shear interface can be concluded that there is a maximum price of shear strength on the variation of NaOH content in 2 hours of immersion with 5% NaOH concentration of 5.24 MPa for large fibers and at 2 soaking time with 5% concentration of 5.04 MPa for small fiber. At 5% NaOH concentration with immersion time varying the maximum shear strength value obtained at immersion of 2 hours 5% was 5.24 MPa for large fiber and 2 hours 5% was 5.04 MPa for small fiber.

Keywords: palm fiber (arenga pinnata merr), polyester, alkali (NaOH), strong shear interface, immersion time.