ABSTRACT

Bamboo is considered the most suitable for replacing wood because it has many advantages to be used as the main material shipbuilding. Application of bamboo as the main material shipbuilding also have to consider the heat that occurs in the engine room. Bamboo laminate must be able to withstand the heat caused by the ship's engines. The purpose of this thesis is to analyze the resilience of bamboo laminate to heat the engine room. First, the manufacture of laminated bamboo specimens. Second, bamboo laminate specimen is heated at a temperature of 60 °C, 80 °C, 100 °C, 120 °C and long heating 2 hours, 4 hours, 6 hours. Third, test material with tensile and bending tests. Fourth, comparative analysis of the variations in temperature and prolonged heating of laminated bamboo that has been done to increase the tensile strength and bend up to a temperature of 100 °C and decreased at a temperature of 120°C. And the results of testing the tensile test and bending test has been done on bamboo laminate temperature of 100 °C with a heating time 2 hours, 4 hours, 6 hours has the greatest power obtained 147.496 MPa tensile strength, MPa 148.755, 170.593 MPa and a strong buckling of 113.16 MPa, 126.936 MPa, 152.52 MPa. At a temperature of 120 °C which decreased tensile strength and bending strength obtained at 141.136 MPa, MPa 131.193, 120.769 and strong buckling of 130 872 MPa, MPa 128.904, 109.224 MPa. Based on the results of the test data laminated bamboo strength still strong from the engine when it gets hot at 80 °C and the heat of the engine room temperature of 45 °C.

Keywords: Wooden Ships, Lamination Bamboo, Bamboo Heating Temperature Variations