"TESTING THE BENDING STRENGTH OF KEVLAR FIBER COMPOSITE CARBON FIBER USING POLYESTER RESIN"

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ABSTRACT

Along with the development of design and technology, especially in the field of shipping which is increasingly sophisticated, the need for better materials is also increasing. The selection of float structure materials on ships requires materials that are lightweight and resistant to corrosion and have high strength. This cannot be separated from the world of shipbuilding engineering as technology and science develops, there are many new researches on how to make a ship that is effective, efficient and effective. One of them is research on fiberglass boats using a composite of carbon fiber kevlar with polyester resin. This study aims to determine the results of the bending test results of the Kevlar carbon fiber composite material with a polyester resin matrix using angle variations of 0° 45° and 90° with ASTM D790 standard. The value of 0° angle stress is 3223,393 N/mm², 45° angle is 853.886 N/mm², 90° angle is 1386,333 N/mm², and the highest bending value is obtained at 0° angle variation. With the modulus of elasticity obtained at the 0° angle specimen is 144537.986 N/MM², the 45° angle is 70394.430 N/MM² and the 90° angle is 85936.948 N/MM². So the highest value of the modulus of elasticity is the orientation angle 0°.

Keywords : Kevlar fiber, fiberglass, composite, ASTM, Compressive Strenght