The Effect of Aerosil and Talc Mixture Variations on Polyester Matrix Composites to be Applied to the Manufacture of Mudguard Using the Hand Lay Up Method (Ir. Dicky Adi Tyagita, S,T., M.T) as chief counselor

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ABSTRACT

This study aims to analyze the effect of variations in the mixture of aerosil and talc on polyester matrix composites that will be applied in the manufacture of fenders using the hand lay up method. Testing was carried out by tensile and impact tests to determine the mechanical strength of the resulting material. this test was carried out at the Malang State Polytechnic laboratory. The test results showed that in the highest tensile test on the mixture of aerosil and talc (15%: 15%) obtained a value of 14.688 N / mm2 while on the fender obtained a result of 18.8 N / mm2 and the impact test obtained the highest value on the mixture of aerosil and talc (15%: 15%) which obtained a value of 0.0809 J / mm2 while on the fender obtained a value of 0.0098 J / mm2. From the results, it can be concluded that the use of talc and aerosil powder has an effect on reducing the tensile test results by 21,8%, this is because the reinforcing particles are not always evenly distributed in the resin matrix which can cause weak points in the material, while in the impact test the composite specimen has a value of 87.8% higher, this is because the reinforcing particles are able to help spread and absorb impact energy more effectively.

Key words: composite, reinforcing powder, mechanical strength, tensile test, impact test