Final Project Report

TITLE: IMPACT STUDIES OF KENAF POWDER COMPOSITE

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ABSTRACT

The uses of Kenaf powder recently as reinforce and filler in the manufacture the nature fibers or in the thermoplastic composite has become one of the important in the manufacturing sector. Kenaf powder have a lot of advantageous of its characteristic and value such as low density, high specific strength and modulus, relative non-abrasiveness, ease of powder surface modification, and wide availability. This study will be consist 2 types of test which are tensile test and impact test by implementing the result of different percentage of weight age for kenaf powder composite. On the tensile test, sample of different percentage of weight age for kenaf powder composite will be pull by Instron 200kN Machine and the impact test, sample of different percentage of weight age for kenaf powder composite will be use the Drop Weight Dynatup 8250 Model Machine at Mara University of Technology, Shah Alam. Tensile test is to determine the working stress of the sample such as Ultimate tensile test, yield stress, percentage of elongation, modulus of elasticity (Young's Modulus), shear stress and strain. Tensile test also use as a parameter to determine whether the sample is brittle material or not. In impact studies, the height of the drop weight mass for Drop Weight Dynatup 8250 Model Machine in three different heights which are 1.27m, 0.89m and 0.48m. This is to make the comparison of energy absorbed by the material in three different heights and the trend of damaged sample can be observed. Impact test is to determine the toughness of the sample different percentage of weight age for kenaf powder composite. To strengthen the studies of the behaviors and mechanical properties, an observation of the microstructure of the damaged surface after impact test. During the result data comparison between the theoretical and experimental shows that kenaf powder composite is the brittle material where the modulus of toughness, modulus elasticity, and ultimate tensile stress(UTS) are increasing as the weight percentage of kenaf powder increase in the composition between kenaf powder and epoxy.

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