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Experimental Study on the Mechanical Properties of Glass Fiber Reinforced Vinyl Ester Composites

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Abstract : This manuscript deals with the fabrication of glass fiber reinforced vinyl ester composite and experimental study on the mechanical properties. In this study glass fiber-reinforced vinyl ester composites with 40:60 ratios were fabricated in laminated specimens using hand lay-up technique and the specimens are subjected to the investigated as per the ASTM standards. Methyl ethyl ketone peroxide (MEKP) is used as catalyst. Cobalt naphthanate were used in the resin to cure at room temperature. The promoter was used to enhance and improve properties of the resin. The curing behavior was investigated for the sample produced in varying proportion of resin mixture and cured at room temperature for 24h and at 100°C for 3h. By incorporating the curing behavior the tensile, compression, flexural and impact strength found to be improved comparatively in heat treated specimen. Micro structural characterization was carried out to examine the morphology in reinforced samples using scanning electron microscope. The radiography test was done to examine the internal structure of the molded specimen.

Keywords : Glass fiber reinforced vinyl ester composite, Hand lay-up technique, Methyl ethyl ketone peroxide (MEKP), Radiography.

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