

Investigation of tensile properties of Bambusa Vulgaris reinforced unsaturated Polyester Resin

ABSTRACT

The investigation of the mechanical behaviour of Bamboo fibre (*Bambusa Vulgaris*) reinforced unsaturated polyester resin has been carried out in this work. The composites have been fabricated manually using the hand lay-up method. The purpose of the work is to develop a suitable alternative as a replacement for synthetic materials in industries. Five different weight fraction of fibre/matrix have been developed and investigated for their mechanical properties such as tensile strength and tensile modulus in accordance to test standard of ASTM D3039/D3039M-17. The ratio used for bamboo fibre and unsaturated polyester resin is 10:90, 15:85, 20:80 and 25:75. The pulping pre-treatment process was used to extract the fibre. The surface failure of the specimen has been determined from the tensile test and fractography failure is also discussed in this study. The results from this research will provide understanding of bamboo composite properties for future flooring.