

TAILORING THE INTERFACE FOR FABRIC BASED EPOXY COMPOSITES

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Abstract: Nowadays industrial world is marked by the use of composites in almost all the domains. A class of special composites is the polymer matrix class. Despite their excellent mechanical properties they are often rejected because of their thermal and electro-magnetic properties. The cheapest way to change these properties is to fill the matrix with various powders such as clay, talc, CNT, ferrite. The use of fiber fabric as reinforcement leads to an easier manner to reinforce the composite. Because of their properties three simple type fabrics are suitable for use – carbon fiber, kevlar fiber and the mixed kevlar and carbon fiber fabric. The use of epoxy resin as matrix arises a challenge because as it is well known it is not adherent to the carbon fiber. This study is about how to ensure a high quality interface between fabric and matrix in the case of fabric based filled epoxy composites. A thin film of rubber was deposited on the fabric. The rubber was added with clay and carbon black. Some changes of electromagnetic properties can be noticed.

Key words: fabric, filled epoxy, rubber, carbon black

