

Carbon fiber reinforced plastic technology

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Abstract

© Published under licence by IOP Publishing Ltd. Meeting strict requirements to the production technology is the necessary condition for manufacturing quality compound materials on the base of carbon fibre T-700 and epoxy binder. Non-optimum operating conditions inevitably lead to depreciation of quality of finished goods, a large number of complaints of defected goods and waste. Using the method of thermogravimetric analysis (TGA) and differential scanning calorimetry (DSC), the thermal properties of prepregs and finished goods on their base have been researched. From the results of DSC-analysis the conclusion has been made regarding the quality of obtained prepregs. The optimum conditions for curing have been set as follows: temperature 150°C, curing time - 20 min, along with that, the finished goods have second order transition temperature equal to 102°C. It has been shown that such operating conditions as temperature and time have significant impact on strength properties of composite, including bending strength.

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