

عنوان مقاله:

Dynamic constitutive model to predict the shear behavior of UD glass/epoxy composites

محل انتشار:

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خلاصه مقاله:

To study shear properties of unidirectional composites at different strain rates a proper strain rate dependent constitutive model should be developed. In the present research, shear mechanical properties of ML-506 epoxy at different strain rates have been investigated experimentally by torsion tests. Based on these experimental results, a constitutive model is developed to predict shear behavior of the neat polymer. Then, by combining this model and a micromechanical model a new strain rate dependent constitutive model for unidirectional (UD) composites is developed. Using this micromechanical model, mechanical properties of UD composites could be predicted at different strain rates. A comparison between predicted and available experimental results shows a good compatibility.

کلمات کلیدی:

ML-506 epoxy, strain rate, constitutive model, glass/epoxy composite, micromechanics

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