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Dependence of T_g Upon Fiber Orientation in Epoxy-Matrix Composites KRISTY VISCONTI, PATRICK BURTON, JOHN D. MCCOY, New Mexico Institute of Mining and Technology, SANDIA NATIONAL LABORATORIES COLLABORATION — Epoxy-matrix glass-fiber reinforced composites were tested using a Rheometrics RMS to investigate the dynamic complex shear modulus. The samples were constructed from woven prepreg tape with all layers layed-up at a single weave orientation. Rectangular samples were cut at various angles relative to the fiber direction. The material was found to be rheologically simple. Consequently, a single master curve was constructed for each sample orientation. From this master curve the corresponding shift factors were extracted and plotted against temperature. The WLF equation was used to estimate the glass transition temperature, T_g . An apparent shift in the glass transition temperature was observed as the orientation of the fiber weave relative to the torsional axis was varied.

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