

## **THE APPLICATION OF THE TIME-TEMPERATURE SUPERPOSITION FOR THE PREDICTION OF THE PROPERTIES OF GFRPs**

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**Abstract:** A semi-empirical scale-down model is presented to predict elastic properties of glass-fibre reinforced plastics (GFRPs), depending on the fabrication process parameters. Dynamic mechanical analyses (DMA) were performed both isothermally and increasing temperature. Storage modulus data were extracted and correlated to cure time and temperature. A master curve was built at 25 °C cure temperature and fitted by a logistic function whereas the shift constant was linearly dependent on the cure temperature. A good prediction was found by the scale-down model, providing an interesting tool for a correct component design and for an accurate procedure in fabrication monitoring.

**Key words:** Polymer-matrix composites (PMC); Glass fibres; Modelling