OUT-OF-AUTOCLAVE PROCESSING OF BMI COMPOSITES

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ABSTRACT
Bismaleimide (BMI) resins are typically used in high-performance structural applications that require superior toughness as well as high-temperature resistance. Out-of-autoclave (OOA) processing of composites offers several key benefits compared to autoclave processing such as lower manufacturing cost resulting from a lower capital cost and lower energy consumption. Since few composite manufacturers have large, high-temperature autoclaves, OOA processing of BMI can broaden the use of these materials. It is desirable to have BMI OOA prepreg systems cure at reasonably low temperatures with sufficient degree of cure and green strength to maintain rigidity for subsequent freestanding post cure. In the present work, high-temperature composite laminates are manufactured using BMI OOA prepreg. Required modifications to the OOA process to achieve low void content are identified. Panels are manufactured using the modified process and their Inter Laminar Shear Strengths (ILSS) are measured. The effect of varying cure cycles in the ILSS of composite laminates is evaluated.