

Development of VARI & RFI for a Corrugated Bridge Deck

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Abstract:

Vacuum Assisted Resin Infusion (VARI) and Resin Film Infusion (RFI) manufacturing processes provide a promising future amongst the different Liquid Composite Molding Technologies. Apart from having minimum resin wastage, these processes allow higher fiber volume fraction (around 0.5 to 0.6), uniform resin impregnation, less fiber wash and minimum production cycle time. However, issues like monitoring and control of 'through the thickness resin impregnation' in case of VARI, maintaining uniform vacuum in the mold, proper selection of permeable mesh, proper monitoring of the process need to be resolved. For that prior simulation of these processes can serve as a good input. This paper is an attempt to analyze some of these issues qualitatively and quantitatively for a special case of a corrugated bridge deck.

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