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Pedestrian Safe Bumper Design from Commingled Glass Fiber/Polypropylene Reinforced Sandwich Composites

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Abstract : The aim of this study is to optimize manufacturing process for thermoplastic sandwich composite structures for the pedestrian safety of automobiles subjected to collision condition. In particular, cost-effective manufacturing techniques for sandwich structures with commingled GF/PP skins and low-density foam cores are being investigated. The performance of these structures under bending load is being studied. Samples are manufactured using compression moulding technique. The relationship of this performance to processing parameters such as mould temperature, moulding time, moulding pressure and sequence of the layers during moulding is being investigated. The results of bending tests are discussed in the light of the moulding conditions and conclusions are given regarding optimum set of processing conditions using the compression moulding route

Keywords : twintex, flexural properties, automobile composites, sandwich structures
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