

INJECTION MOULDING OF DISCRETE LONG-GLASS-FIBRE REINFORCED POLYPROPYLENE (LGFRP)

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Abstract: Complex shape parts were injection moulded in long-glass-fibre reinforced polypropylene (LGFRP) to study property distribution inside the geometry. Calorimetric analyses, dynamic mechanical and ordinary flexure tests were performed on specimens extracted on purpose from the components. Mechanical properties strongly vary along the two principal directions, with a significant performance loss in the direction normal to the filling one, showing a high anisotropic effect due to glass fibre orientation. As a result a great attempt must be done in material behaviour prediction for structural design if super-dimensioning or poor performance need to be avoided.

Key words: Polymeric-matrix composites (PMCs); Glass fibres; Injection moulding; Polypropylene