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INTRODUCTION TO FILM INSERT INJECTION MOLDING

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Condition: New. Publisher/Verlag: LAP Lambert Academic Publishing | A PRACTICAL | Film insert injection molding (FIM) is an increasingly popular technique to impart decoration onto moldings. In this study, FIMs were produced by using amorphous and crystalline polymers that were evaluated based on their film-substrate interfacial adhesion strength. Interfacial bonding between amorphous polymers could be achieved at any temperature above the glass transition, though higher temperatures are favorable to enhance diffusion rates. As for crystalline polymers, melting of the crystalline phase in the film was needed to create mobile molecular chains before any significant bonding could take place. Hence, the resin temperature should be sufficient to induce melting of the film surface. Regardless of materials characteristics, certain criteria have to be met to ensure good interfacial bonding. Good film-substrate intimacy should be attained to provide a wider contact area for interfacial diffusion. Resins with low Mw and linear chain structures could easily diffuse across the interface and form molecular entanglements with sufficient cooling. Hence, barrel and mold temperatures were the most important parameters that governed the interfacial strength during molding. | Format: Paperback | Language/Sprache: english | 200 pp.



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