STUDY OF PROCESSING PARAMETERS ON PART WARPAGE OF IN-MOLDPOLLER INJECTION MOLDING

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Abstract

In-mold roller (IMR) injection molding is one of the commonly used In-Mold Decoration technology for ink transfer. The effect of processing parameters on part’s warpage is very important for product quality. In this study, the PET film with thickness of 0.05mm and 0.036mm is molded and computer simulation analysis is performed to compare the result with experiment. It was found that high melt temperature and thick film would result in heat stagnation between surface-frozen layer and film interface leading to a large part’s warpage. However, a high mold temperature resulted in a low warpage. For IMR molding, the mold temperature difference between core and cavity surface was about 6.71~12.94°C and the warpage varied from 0.15mm to 0.91mm under specified conditions.