Experimental Investigation into Suitable Process Conditions for Plastic Injection Molding of Thin-Sheet Parts

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Abstract

This study performs an experimental investigation into the effects of the process parameters on the surface quality of injection molded thin-sheet thermoplastic components. The investigations focus specifically on the shape, number and position of the mold gates, the injection pressure and the injection rate. It can be seen that the gravity force entering point improved filling of the cavity for the same forming time and injection pressure. Moreover, it shows the same injection pressure and packing time, the taper-shape gate yields a better surface appearance than the sheet-shape gate. The experimental results provide a useful source of reference in suitable the process conditions for the injection molding of thin-sheet plastic components.

Keywords: plastic injection molding, thin sheet, surface quality

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