The influence of different mold temperature on warpage in a thin shallow injection molding process

Abstract

Every injection molding parameter have its own influence towards the quality of an injection-molded part. Temperature, pressure and time are main parameters that typically highlighted in controlling the warpage defect of the part. This study is performed to investigate the influence of mold surface temperature, core and cavity temperature on warpage defect of a thin shallow part. The warpage results are obtained using Taguchi Method and optimized using Analysis of Variance (ANOVA) simulated in two experiments using Moldflow software. Confirmation run of best setting for experiment 2 which considers core temperature and cavity temperature resulted to be the more effective than considering only mold surface temperature in experiment 1. It is concluded that by considering core and cavity as the mold temperature, the warpage defect can be minimized up to 79.9%.