EFFECT OF PROCESSING CONDITIONS ON MECHANICAL PROPERTIES OF ULTRA HIGH SPEED INJECTION MOLDED ABS PARTS

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Abstract

It is known that the ultra high speed injection molding is a proper solution for molding thin-wall parts. This study investigates the effect of processing conditions including melt temperature, mold temperature, injection speed on mechanical strength of molded ABS parts. Both single gate and double gates tensile test specimens were molded with and without weldlines. It was found that higher melt temperature and mold temperature as well as faster injection speed would increase tensile strength. Faster injection speed will also influence part mechanical properties, particularly in Young’s modulus will increase of 15%, due to flow-induced molecular orientation along melt flow direction.