

Effect of inserted injection molding on the residual stress and the weld line

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ABSTRACT

When the inserted injection molding that made some cracks, we can not really grasp the reason of cracks, although there have no defect on some products appearances, but they will cause products to be destroyed by the factor of environmental and the stress for a long time. Express with view on the material, namely some plastic products have strength that have exceeded the material strength, so how to strengthen structure and material strength or how to reduce the residual stress, it is a great method to solve them. On the other hand, inserted injection molding often creates weld lines, it is a great factor which weakens the structure strength, too. But the residual stress and the weld line have different methods of control on injection molding, so this experiment use destroy method and no-destroy method and analyse of Moldflow, then try to get the optimization conditions by Taguchi Method. Moreover the inserted injection molding have the other process like ultrasonic plastic welding, thermal welding and interference method. However can the process advantage solve the reasons of injection molding cause cracks on the residual stress and the weld line. So we must research the effect of inserted injection molding on the residual stress and the weld line on the same time, and hope to get the concrete conclusion, let the products have development potentiality even more.

Keywords : residual stress, weld line, inserted injection molding

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