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Optimization of Injection Molding Parameters by Using Plastic Adviser Module

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Abstract : Injection molding is a manufacturing process especially used for producing plastic components. The three important phases of injection molding include, filling, clamping, and cooling. During these phenomenal activities, there is ever possibility for occurrence of problems like wastage of material, time and quality. In the present work, mould flow analysis was conducted on various components by varying processing parameters for different materials. The processing parameters used for optimization are material melting temperature, mould temperature, Maximum machine Injection pressure, velocity/pressure switch-over by volume, injection time, Machine clamp open time. The materials considered for analysis are Poly Propylene (PP) and Acrylonitrile butadiene styrene (ABS). Plastic Adviser, a module of Pro/Engineer is used for Flow Analysis. In the present work molding and material flow analysis was conducted on 3-phase meter bottom box and fabricated the optimized model using injection molding equipment, which is controlled by Plastic Adviser module in Pro/Engineer. Optimization of injection molding was done by reducing material wastage and thus the quality in fabrication is achieved.