

A NEW APPROACH TO CONFORMAL COOLING CHANNELS IN INJECTION MOLDING PROCESS

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Abstract: *In this paper, a new approach to design the conformal cooling channels for injection molding process is proposed to reduce the cycle time and provide the unique cooling zones. In order to obtain the more unique cooling zones, based on the temperature distribution on the mold surface after the filling stage, the plastic product is split into parts which will be cooled separately by the sub-conformal cooling channel obtained from the optimization procedure. In the range of quasi-steady state, heat transfer for each split zone is analyzed as a foundation to establish the cooling time function in which variables are the cooling size and its location. The optimization process where the objective function is stated as minimization of the cooling time with boundaries ensuring the design realistic will optimize the cooling system layout.*

Key words: *Conformal cooling channel, Optimization, cooling time*



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