ANALYSIS OF THE POSSIBILITY OF MINIMISING THE WARPAGE IN INJECTION MOULDING

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Master of Engineering in Manufacturing Systems Engineering

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DECLARATION

I declare that this is my own work and this thesis/dissertation does not incorporate without acknowledgement any material previously submitted for a Degree or Diploma in any other University or institute of higher learning and to the best of my knowledge and belief it does not contain any material previously published or written by another person except where the acknowledgement is made in the text.

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Abstract

This thesis focuses on the research “to investigate and analyse the warpage in a product and reduce the warpage using optimum parameters”.

Factors affecting for warpage are discussed and categorized their relative position of affecting. An article subjected to warpage is selected and factors affected for the warpage are detailed analysed one by one. The research carried out on the basis of selected major factors. Part geometry, gate location, runner system, filling and packing/ holding pressures, filling and packing/ holding times and cooling layout are analysed and changed to determine optimum parameters and minimize the warpage factor. Modified mould design was done by utilizing Computer Aided Design and analysed the mould to ensure the success of the design. The CAD Software used for design is Unigraphics NX and two software packages used for analysis of warpage are Auto Desk Moldflow Advisor and Solid Works Plastics. Finally with the justification of changed parameters the existing mould is modified to meet the required quality of product.

In this context, all above details are comprehensively discussed and summarized in the body of this report accompanied by necessary drawings, data tables and analysis results etc.

Acknowledgement

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LIST OF ABBREVIATIONS

Abbreviation	Description
AMA	Autodesk Moldflow Adviser
SWP	Solid Works Plastic
EDM	Electrode Discharge Machining
CMM	Coordinate Measuring Machine

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