

**SOLVING MOULD PROBLEMS FOR AUTOMOTIVE PART (BOX LOWER)  
BY USING SIMULATION SOFTWARE  
(CADMOULD)**

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## **ABSTRACT**

### **SOLVING MOULD PROBLEMS FOR AUTOMOTIVE PART (BOX LOWER) BY USING SIMULATION SOFTWARE (CADMOULD)**

The study was conducted to solve the mould problems for automotive part (Box Lower) using Cadmould simulation software. Box Lower parts for model BLM is simulate by using Cadmould. Cadmould is CAE software that uses to simulate plastic flow during injection moulding process. Box Lower is made by using General purpose 6523 Polypropylene Homopolymer producing by Lyondell Basell Montell. In the study the process parameter chosen were filling time, melt temperature and wall temperature. This parameter was varied and their effect on filling problem was simulated. Based on this study it was found that the process parameters can not solve the filling problem of the part. Beside that, the cooling channel and part thickness of the part was analyze to solve the filling problem. With the cooling system design the filling problem cannot solve the filling problem but with increase the part thickness the filling problem have been solve. The dimensions of the part thickness was not uniform due to the problem occur. Generally, it can be concluded that CAE simulation technique was useful to solve the filling problem in order to obtained perfect parts.

## CHAPTER 1

### INTRODUCTION

#### 1.1 Background

Injection molding represents the most important process for manufacturing plastics part. It is suitable for mass producing articles, since raw material can be converted into a molding by a single procedure. Most cases finishing operations are not necessary and the advantage can make complex geometries in 1 production step in an automated process. The production from injection molding can be found everywhere in daily life such as toys, automotive parts, household articles and electronic goods [1].

Central element of injection molding process is the mould. Mould is a tool for shaping plastic product. It is constructed in such a way that it can be run for a desired number of cycles. Mould is at least made from 2 parts, which is an assembly of parts where plastic is being injected in, cooled down and ejected out. The product is formed between 2 parts of the mold. The spaces between these two parts are filled up with plastic materials which take the shape of the product. One part is the female portion, which will shape the external of the product, called cavity. For the other part is the male portion which will take the internal shape of the product and that is called core.