

## Porosities Comparison between Production and Simulation in Motorcycle Fuel Caps of Aluminum High Pressure Die Casting

**Authors :** P. Meethum, C. Suvanjumrat

**Abstract :** Many aluminum motorcycle parts produced by a high pressure die casting. Some parts such as fuel caps were a thin and complex shape. This part risked for porosities and blisters on surface if it only depended on an experience of mold makers for mold design. This research attempted to use CAST-DESIGNER software simulated the high pressure die casting process with the same process parameters of a motorcycle fuel cap production. The simulated results were compared with fuel cap products and expressed the same porosity and blister locations on cap surface. An average of absolute difference of simulated results was obtained 0.094 mm when compared the simulated porosity and blister defect sizes on the fuel cap surfaces with the experimental micro photography. This comparison confirmed an accuracy of software and will use the setting parameters to improve fuel cap molds in the further work.

**Keywords :** aluminum, die casting, fuel cap, motorcycle

**Conference Title :** ICMETA 2015 : International Conference on Mechanical Engineering : Theory and Application

**Conference Location :** Singapore, Singapore

**Conference Dates :** March 29-30, 2015