Abstract

Material selection for mold making are not only material prices , wages but also there are other factors such as thermal, strength, shine and resistance to temperature changing that caused distortion and cracks. Preform injection molding from Polyethylene Terephthalate (PET) consumes time for drying granulated plastic in 4 – 6 hours at 140 - 160°C and injects at 280 – 300 °C. This is a very high temperature to inject into mold at 10 – 15°C in cool area. The material for mold making must be able to resist to thermal shock. Today molding machines are made of grade P20 steel (Standard JIS) to produce preform that takes long cycle time due to poor cooling. The research aims to compare the pricing time in mold making to preform injection time that made of aluminum - A7075 grade and grade P20 steel. The experiment is to make a mold that made of aluminum A7075 grade and grade P20 steel injects 15 gram preform. The PET is used to blow into a blow mold with pressure at 30 – 35 bar (Two – Stage) that are 2 bottles of 350 ML. The results of material selection for preform mold making showed that aluminum A7075 grade is cheaper 27.04%, the mold price is cheaper 23.6% and consumes less cycle time than grade P20 steel.

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