



P-11-628

EXPERIMENTAL STUDY ON THE EFFECTS OF SHOT SIZE ON THE DEFLECTION STRENGTH OF INJECTION MOLDED THERMOPLASTIC FOAMS

reza mirabzadeh, ehsan soodmand soodmand, amir behshad,

Mechanic, Islamic Azad University Of Shadegan

reza.mirab@yahoo.com

Foam injection molding is an extension of conventional injection molding with foaming. Advantages of foam injection molding include absence of the sink mark on the part surface, better geometric accuracy, weight reduction, low back pressure, faster cycle time, better weld line strength, high stiffness-to-weight ratio, etc. This paper presents an experimental study on the effects of processing parameters including blowing agent amount and shot size on deflection strength of injection molded thermoplastic foams. The mold cavity dimension is 105×105×3.2 mm and Poly Propylene (pp) was used as thermoplastic material. Azodicarbonamid (ACA) used as chemical blowing agent and its amount was changed between 0.5 to 1.5 wt%. Also, shot size varied from 75 to 90 % of cavity volume. The results showed that non-foams have higher deflection strength in comparison with foams. Also, it was found that deflection strength of structural foams decreases if the amount of blowing agent increases. Moreover, when shot size increases, deflection strength will also increase. **KEY WORDS:** Thermoplastic foam, Injection molding, deflection strength, Blowing agent, Shot size.