

Study the Pressure of Plastic Materials (Kind Polyethylene) P. E. Hd Inside the Mould in Relation to the Different Injection Parameters ¹

Fayez Al Taayan ²

Moutaz Jawich³

Abstract

In this research work we studied the relation between the pressure inside the injection mould of Polyethylene material in terms of the different injection parameters (the temperature of injection cylinder – the injection pressure in the front of the screw – injection speed) and the influence of the feeding groove length and the section of the opens on the pressure. The experiments have shown that the relation between the pressure inside the mould and the pressure in front of the screw is linear of the shape $P_1=0.756P+A$ where A is a negative constant representing mean the loose of pressure (increasing the length of the feeding groove leads to the loose of the pressure, while increasing the section of the opens results decreasing of the loose of the pressure) and related as well to the shape and section of the feeding groove.

The influence of temperature, was positive and gave good results as its increase made the movement of the plastic material easier inside the mould. It is preferable to increase the temperature in the cylinder if the specifications of the plastic material allow it.

The influence of the change of the injection speed for the used material, PE, on the pressure was small of 3% only.

Key Word: Polyethylene - pressure - mould

¹ For the paper in Arabic see pages (255-274)

² Design Eng. Department Faculty of Mechanical and Electrical, Damascus University.

³ Design Eng. Department Faculty of Mechanical and Electrical, Damascus University.