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# DESIGNING OF A PROFILE EXTRUSION DIE

BY

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A RESEARCH PROJECT DISSERTATION SUBMITTED IN PARTIAL  
FULFILLMENT OF MASTER OF SCIENCE IN POLYMER  
TECHNOLOGY.



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## **Abstract:**

Designing of the proposed profile extrusion die had few main tasks. One was to find out the most suitable type of die and the other was to calculate important operating parameters like pressure drop. The next is to calculate the land and calibration dimensions. Due to complex nature of the proposed profile, it was approximated to a slit die for the purposes of calculating pressure drops and die swell / draw down effects. Based on the thickness calculated for die, product and equilibrated swell state were used to calculate the dimensions of the complex die land and calibrator. When designing the die, due consideration was given to phenomenon like ,melt flow instabilities and shrinkage on cooling.

Only top half of the PVC trunking profile was designed in this exercise, as trials are needed to validate the models selected and based on these values only, progress onwards could be envisaged.



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