

Improving Thermal Performance of Thermoforming Machines

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Abstract

Our project will be designing a curtain to reduce loss of hot air from the heating oven of a vacuum molding press. Design feasibility is judged by choosing a curtain material that is resistant to heat. Temperature levels in the oven side are as high as 950 oC. Our objective is to save energy during the cycle time. Through this semester, we will develop multiple design concepts with different shapes and different sizes. This curtain needs to be designed in CAD using (CATIA). After choosing the material and design it, we are going to use the plastic lab to do tests and try to make vacuum molded plastic parts. The project is also aimed at running heat loss calculations from all boundary walls of the oven area and provide thermal insulation design for all hot walls. The project also includes redesign of the rotating platform to provide continuous closure of the oven area during operation.

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