

Objectives

The following objectives were determined to be necessary for the successful completion of this project:

1. **Review of Thermoforming Process.** The entire thermoforming process must be understood with the forming insert as a integral component in the overall process.
2. **Analysis of Current Mold Cavity Design.** The current female molding insert will be analyzed for airflow efficiency using design drawings and CFD (computational fluid dynamics) software.
3. **Design Alterations.** Weaknesses will be identified from the analysis of the current design allowing modifications to be made to improve airflow efficiency.
4. **Prototype Testing.** Prototypes of the new design will be produced and tested for airflow efficiency to validate CFD results.
5. **Economic Analysis.** Based on the prototype testing, the best designs will analyzed in financial terms meeting the mandatory one-year payback.
6. **Conclusions.** A summary of the findings obtained from experimentation are related to project goals and objectives, including financial and technical benefits as well as further considerations.
7. **Recommendations.** Based on testing and financial viability, a course of action and design changes will be recommended. General design guidelines for female molding inserts will be established and presented.