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BAMBERGER POLYMERS TECH TIPS

Design Considerations

Many factors play a role in the success of a new product from fit and form to overall function. The design of a part is one primary factor, critical to the success of new product development.

All too often a new product lacks proper design considerations making the product too expensive, of poor quality, or not capable of meeting market expectations.

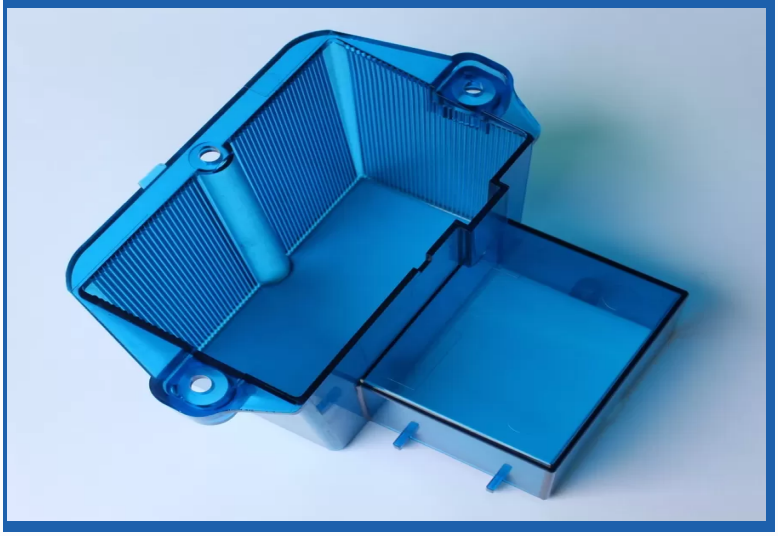
Product design is an iterative process based on the mission statement of the product and its performance expectations. To ensure success, a designer must know the performance requirements and end-use of the final product. One must also consider production and manufacturing early in the design process to ensure cycle times and scrap rates remain low.

Design

These "design considerations" include, but not limited to, the total number of gates along with the nominal wall and flow channels to support how the part is molded as well as draft angles ease part ejection. Estimating the optimal nominal wall thickness, designed with uniformity in mind, can reduce pressures, minimize warp and maintain part physical properties and appearance. Where changes to thickness are required, consider thick to thin segments to reduce pressure drops through an injection mold. This important concept affects both product design and the processing of molded components by maintaining consistent pressure on the flow front.

Along with wall thickness, gate locations and number of gates will also affect how a part will process at the molder. The gates are the material's entrance point from the spru to the part. Multiple gates will effectively reduce the pressure, but also create additional knit or flow lines.

Draft angles are required to minimize the amount of force required to push the part during de-molding. These angles surround the part and are incorporated into all features of the tool.



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