
RIM Molding Insights

Reaction injection molding (RIM) is a process used to produce enclosures and covers in a wide range of applications and industries. The material used in RIM is typically a two-part urethane that is injected into a mold under low pressure. The low viscosity, low temperatures and low pressures provide some very distinct benefits or advantages for the RIM process compared with other plastic processing methods.

A brief overview of the characteristics of RIM:

- *Large Parts* - The flowability of the liquid polyurethane components allows RIM to easily fill molds for large parts.
- *Encapsulation* - Similar to insert molding in plastic injection molding the RIM process allows for the encapsulation of fasteners and components manufactured from various materials such as steel and aluminum.
- *Variable Wall Thickness* - RIM process offers you the flexibility to design parts with wall thickness variations.
- *Post Painting* - The surface finish of parts molded with the RIM process allows for Class A painted parts.
- *Low Cost Tooling* - RIM tools have a long life, typically are made from cast epoxy or machined aluminum and generally are 70% less expensive than injection molded tools. The low injection pressures of the RIM process allow mold builders flexibility in the design and the ability to use less expensive mold materials.

A comparison of RIM and Plastic Injection Molding

- RIM tooling is approximately 70% less expensive
- Thick, structural parts can be molded without sink
- Walls can be thick and thin on same part
- Tolerances approximate to Injection Molding
- Insert molding-can mold over hardware, etc
- Much better economies for lower volume parts
- Shorter tooling lead times resulting in improved "time-to-market"