

DIP MOLDING AND COATING

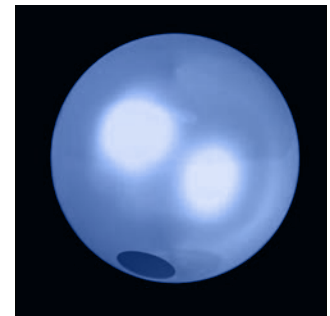


In the broadest sense silicone dipping can be divided into 2 processes; dip molding (sometimes referred to as casting) and dip coating. Let's take a closer look at each.

Dip Molding

The process begins in SSF's tool room where a mandril is produced in the shape of the final part. Mandrils are typically machined from metal but can also be fabricated from engineered plastics and ceramics. The mandril is immersed in a vessel containing silicone dispersion and then withdrawn. The mandril, now coated with a thin liquid silicone film, is then fixtured and placed in an oven where the silicone is vulcanized. Following vulcanization, the silicone rubber is stripped from the mandrel creating the finished product.

Wall thickness of parts can be adjusted by varying the number of dips or by adjusting the percent solids concentration of the silicone dispersion. SSF's dipping experts understand and control the many variables that contribute to the quality and reproducibility of each part. Process validations include evaluation of mandril surface finish, immersion and withdrawal angle and speed, dispersion viscosity and temperature, ambient manufacturing conditions, and vulcanization parameters.



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Dip molding provides a cost-effective alternative to silicone molding processes where costly metal molds are often required. This process can be used for rapid prototyping of complex, thin walled shapes or may be scaled for large volume commercial production.

Dip Coating

A dipping process can also be used to create silicone coatings on various medical devices. Various types of medical components, including metal, plastic, fabric and glass, can be coated with thin silicone films which are then vulcanized to produce a smooth, durable, and biocompatible finish. For some devices such as needles, cannulas, and syringes, a non-curable film is deposited on the device surface as lubricant to enhance patient comfort.

Experience breeds expertise. This year SSF will dip coat more than 15,000,000 electro-surgical blades. Our highly automated and validated process produces consistent and reproducible coat weights.