

Cast Composite Urethane Services

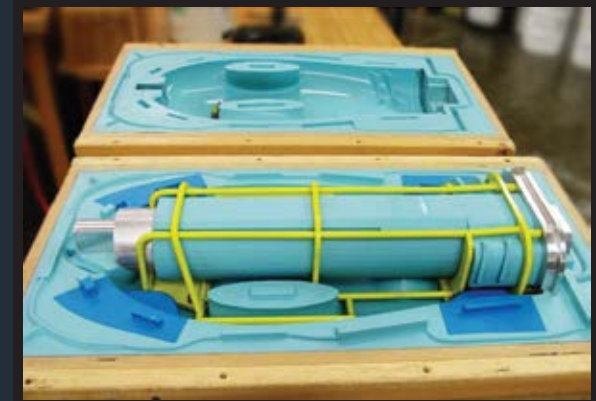
Urethane casting (RTV molding, silicone molding, or cast thermoset) is an advanced manufacturing technique that uses silicone molds to create high-quality plastic parts. Ideal for prototyping, market validation, and cost-effective alternatives to injection molding, it offers unparalleled versatility. This process enables complex features like overmolding, insert molding, sharp internal corners, and parts without the draft angles or uniform wall thicknesses required by traditional injection molding. Whether you're looking for precision or flexibility, urethane casting provides the perfect solution.

Urethane Casting Process

1. Produce a master pattern/part using 3D Printing or CNC Machining
2. Build the mold by pouring platinum silicone around master
3. Pour liquid polyurethane resin into silicone mold, cure inside pressure tank
4. Open mold and remove cured urethane part
5. Finish part to customer specification

Advantages and Usage of Cast Urethane

- *Advanced Prototypes*
 - Production grade materials for functional prototypes that accurately represent production parts.
- *Initial Manufacturing*
 - First run production parts manufactured weeks before production tooling is complete.
- *Low-Volume Production*
 - When quantity, design, or material does not justify investment in injection mold tooling.
- *Market Testing & Demonstration*
 - Samples for user evaluation, customer feedback, testing, marketing, or investment presentations.



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Materials, Colors, & Finishes

- Cast urethane parts offer excellent color, surface finish, quality, and toughness for quantities from one to one hundred.
- Urethanes come in a wide range of materials, including flexible, rigid, silicone, epoxy, flame-retardant, ABS-like, polycarbonate-like, and rubber-like options. Proto Technologies provides solutions for any material requirement.
- Pigments can be blended into urethanes to achieve custom colors, including precise color matching to existing products or specifications.
- Urethane cast parts can be finished in matte/frosted, semi-gloss, high-gloss, textured, smooth, or custom surface finishes to meet customer needs.

Materials Available

Flexible Urethanes

Adiprene L100
F-140 (40 Shore A)
F-150 (50 Shore A)
F-160 (60 Shore A)
F-170 (70 Shore A)
F-180 (80 Shore A)
F-190 (90 Shore A)
F-195 (95 Shore A)
WC-565 (Water Clear)
WC-575 (Water Clear)
Steralloy (FDA Approved)
TU 89MF

Rigid Urethanes

TC-803 (75 Shore D)
TC-890 (80 Shore D)
TC-4007 (High Heat)
TP-4020 (High Strength)
VA-273 (Optically Clear)
Steralloy (FDA Approved)
Silicone
M-2 (60 Shore A)
QM-280 (80 Shore A)
RTV 3040 (Clear)
RTV 3460 (60 Shore A Elastic)
Dragon Skin Series (High Elastic)
Sorta Clear Series (Food Safe)

Flame Retardant

FX-8061 (UL 94 V0-60A)
FX-8071 (UL 94 V0-70A)
FX-8081 (UL 94 V0-80A)
FX-8091 (UL 94 V0-90A)

Flame Retardant Heat Deflection

TC-890FR (195°F-UL94 V0)
FX-8575 (122°F-Clear-UL94 V0)
FX-8585 (266°F-UL94 V0/Far)
TP-4014 (230°F-UL94 V0/Far)
TP-4016 (250°F-UL94 V1)

QUOTES

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CERTIFICATES

SBA 8(a) Cert: Exit Date 02/17/2032

Alaska Native Owned (ANC)

AS9100D:2016/ISO9001:2015

ITAR & JCP Certified

EIN: 91-1860749

CAGE: 49WJ8

DUNS: 949037329

SAM: L32HMCJ3SVL9

NAICS: 332710, 326199, 332721,
332999, 336413, 336419, 333511