



Process Selection Guide

Process	Applications	Accuracy	Feature Detail	Surface Finish	Strength	Delivery (typical) ⁽⁵⁾
Stereolithography	Limited number of prototypes needed (1 - 10) Form and fit testing Functional testing (incl. snap-fit) ⁽¹⁾ Plastic part rapid tooling patterns Metal part rapid tooling patterns Focus group and presentation models High heat applications ⁽³⁾	+/- .005 in. +/- .001 in./in.	> .015 in. > .005 in. (high res mode) ⁽⁶⁾	⊖⊖⊖⊖	⊖⊖ to ⊖⊖⊖⊖ ⁽²⁾	1 to 3 days
Polyjet	Limited number of prototypes needed (1-10) Form and fit testing Elastomer parts (Shore A) Multi-material parts (i.e. Shore D and Shore A) Plastic part rapid tooling patterns Metal part rapid tooling patterns Focus group and presentation models	+/- .004 to .01 in. ⁽⁴⁾	.008 to .015 in. ⁽⁴⁾	⊖⊖⊖⊖	⊖⊖ to ⊖⊖⊖⊖ ⁽²⁾	1 to 3 days
Selective Laser Sintering	Limited number of prototypes needed (1 - 10) Form and fit testing Functional testing Field testing High heat applications	+/- .010 in. +/- .0015 in./in.	> .020 in.	⊖⊖	⊖⊖⊖⊖	2 to 3 days
Fused Deposition Modeling	Limited number of prototypes needed (1 - 10) Concept Models Functional testing RF Testing	+/- .005 in. +/- .002 in./in.	> .020 in.	⊖⊖	⊖⊖⊖	2 to 4 days
Urethane Castings	Intermediate number of prototypes needed (5 - 100) Form and fit testing Functional testing Field testing Focus group and presentation models	+/- .010 in. +/- .002 in./in. (Local area to +/- .001 in.)	> .030 in.	⊖⊖⊖⊖	⊖⊖⊖⊖	10 to 14 days (Qty 5)
Rapid Investment Castings	Quantity 1 to 20 metal prototypes needed Form and fit testing Functional testing Field testing Focus group and presentation models	+/- .010 in/in	Geometry dependent	⊖⊖	Same as Production	11 to 16 days
Metal Castings	Quantity 5 to 100 metal prototypes needed Form and fit testing Functional testing Field testing Focus group and presentation models	+/- .010 in. +/- .002 in./in. (Machining to +/- .0005 in.)	Geometry dependent	⊖⊖⊖	Same as Production	15 to 20 days (Machining add'l 5 days)
Injection Molding	Qty 5 to 50,000 production plastic parts needed Prototyping, pre-production, limited production needed Functional testing Field testing Focus group and presentation models	+/- .005 in. +/- .001 in./in. ⁽⁴⁾ (Local area to +/- .001 in.)	Geometry dependent	As needed	Same as Production	15 to 25 days

1. Functional testing dependent on specific SLA material used 2. Material dependent 3. High Heat applications dependent on specific SLA material used 4. Tolerances geometry dependent 5. Business days 6. Part size limited/Geometry dependent