FORWARD AM
Innovating Additive Manufacturing

BASF
We create chemistry

Ultracur3D® ST

High Impact Reactive Urethane Photopolymer

Ultracur3D® ST (high impact product line) is a medium-viscous, highly reactive photopolymer for 3D printing applications resulting in tough multipurpose parts. It can be used to produce high performance functional parts by using Stereolithography (SLA), Digital Light Processing (DLP) or Liquid Crystal Display (LCD) machines. Ultracur3D® ST can fulfill the requirements of functional applications regarding high accuracy and mechanical strength, where existing 3D printing materials often show limitations.

Benefits at a Glance

- High impact strengths
- High elongation at break
- High details
- Fast printing product
- High E Modulus
- High long-term UV stability of printed parts

Example Applications

- Performance prototypes
- Electrical casings
- Functional end-use parts (e.g. camera housing)
- Snap-Fit
- Jigs & fixtures
- Textured parts
- Orthopedics

Material Properties: Ultracur3D® ST 45B

Tensile Strength	**50 MPa**
Flexural Modulus	**1700 MPa**
Elongation at break	**56 %**
Impact Strength Izod (notched)	**31 J/m**
HDT at 0.45	**55 °C**

Project Reference Camera Housing

Description of the project & challenge:

- Origin designed an intricate camera-mount housing for their new equipment.
- A compound angle meant that the part could only be machined by a 5-axis CNC or a 3-axis CNC with multiple steps.
- If manufactured traditionally, the parts would have been too expensive to produce at both low and high volumes.
- The team explored Additive Manufacturing as a solution.

Our solutions and added value for the customer:

- Origin leveraged their Programmable Photopolymerization (P3) technology, which allows for maximum throughput, minimal waste, and post-processing in minutes.
- BASF's engineering grade Ultracur3D® photopolymer was used to enable optimal surface finish, outstanding mechanical strength and high throughput.
- Merging both competencies, 100 finished camera mount housing parts were produced within 24 hours, at a fraction of traditional manufacturing costs.

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