

TECHNICAL DATA SHEET

Elastomer 3D Printing Service

Flexible photopolymer parts — industrial DLP (digital light processing), Shore 60A–80A



Flexible lattice parts produced by DLP elastomer 3D printing — smooth surfaces, fine struts, tunable softness.

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ACS MATERIAL, LLC

959 E Walnut St., Suite 100
Pasadena, CA 91106, USA

Phone +1 (866) 227-0656

Fax +1 (781) 518-0284

contact@acsmaterial.com

Revision Date **08/15/2026**

SECTION I

Service Overview

ACS Material offers project-based elastomer 3D printing — flexible, rubber-like photopolymer parts produced by industrial DLP (digital light processing) vat photopolymerization. A 405 nm UV light engine projects each cross-section onto a vat of liquid elastomer resin, curing an entire layer at once; washed and post-cured, the finished parts stretch, compress, and recover like molded rubber, with the smooth surfaces and fine visible lattice detail that projected photopolymer processes are particularly suited to.

Four photopolymer elastomer options span Shore 60A–80A, with supplier-reported elongation at break up to 500%. Single-piece builds up to 768 × 432 × 450 mm cover full footwear plates and sizeable soft-robotics components, and mold-free manufacturing opens geometries — conformal lattices, zonal-stiffness structures, one-piece flexures — that may be difficult or uneconomical to mold. Every job is engineered and quoted to the specific project; please contact us with your design (STEP/STL) for materials, feasibility, lead time, and pricing.

SECTION II

Capabilities

Parameter	Specification
Process	DLP vat photopolymerization (405 nm UV LED)
Build Volume (W × D × H)	Up to 768 × 432 × 450 mm (30 × 17 × 17.7 in), typical — confirmed per project
Nominal XY Pixel Pitch	100 µm (4K projection)
Layer Thickness	50–200 µm
Materials	4 photopolymer elastomer options, Shore 60A–80A (white / black)
Elongation at Break	Up to 500% (supplier-reported typical)
Post-Processing	Wash, post-cure, and surface finishing (as required)

Values are supplier-reported typicals shown for orientation and are not design allowables; the exact build size, accuracy, and finish achievable for a given part are confirmed at the time of quotation.

SECTION III

Material Options

Material	Shore hardness	Tensile strength (MPa)	Elongation at break	Detail level
60A White Elastomer	60A	15	200%	Standard
65A Black Elastomer	65A	26	200–300%	High
75A White Elastomer	75A	15	300–500%	Standard
80A White Elastomer	80A	25	300–500%	Standard

Values are supplier-reported typicals; test method, specimen preparation, print parameters, and post-cure can affect results. Standard colors are white and black. If your target hardness falls outside the 60A–80A range, contact us to discuss alternative material or process options.

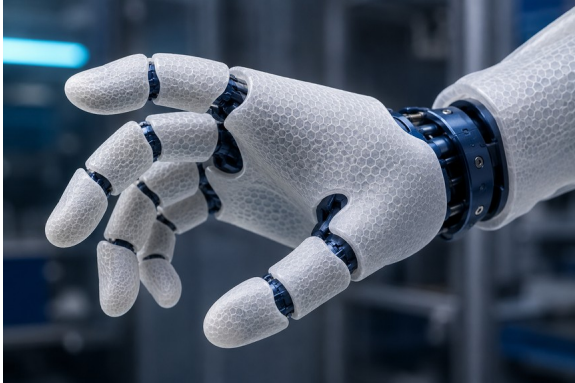
SECTION IV

Applications

- Humanoid & Soft Robotics
- Footwear & Lattice Midsoles
- Sealing, Damping & Vibration Control
- Wearables, Grips & Consumer
- Research & Prototyping

Typical target applications, each subject to material and geometry review.

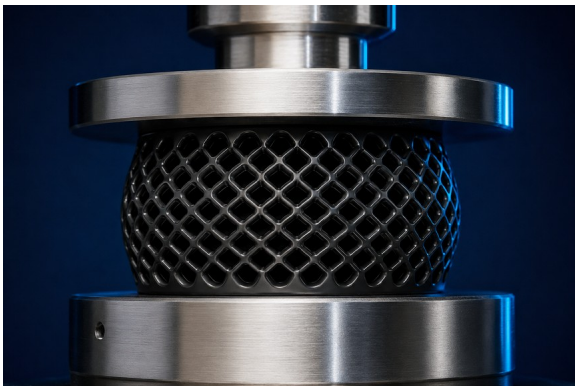
Representative parts



Silicone-coated tactile skin over a printed elastomer honeycomb framework



One-piece printed lattice footwear with graded lattice density



Bionic-muscle-style passive lattice under compression



Seals, gaskets, bellows, and lattice-core dampers

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DISCLAIMER

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