

Durable

Durable Resin for Low Friction and Wear

\$175 / L

With low modulus, high elongation, and high impact strength, Durable Resin produces parts with a smooth, glossy finish and high resistance to deformation. Use this material for applications requiring minimal friction.

Consumer packaging

Snap fits and flexures

Bushings and bearings

Living hinges



FLDUCL02

formlabs 

Material Properties Data

	METRIC ¹		IMPERIAL ¹		METHOD
	Green ²	Post-Cured ³	Green ²	Post-Cured ³	
Tensile Properties					
Ultimate Tensile Strength	18.6 MPa	31.8 MPa	2.7 ksi	4.61 ksi	ASTM D 638-10
Tensile Modulus	0.45 GPa	1.26 GPa	65.7 ksi	183 ksi	ASTM D 638-10
Elongation	67 %	49 %	67 %	49 %	ASTM D 638-10
Flexural Properties					
Flexural Stress at 5% Strain	4.06 MPa	27.2 MPa	0.59 ksi	3.95 ksi	ASTM D 790-10, Procedure A
Flexural Modulus	0.16 GPa	0.82 GPa	23.4 ksi	119 ksi	ASTM D 790-10, Procedure A
Impact Properties					
Notched IZOD	130.8 J/m	109 J/m	2.46 ft-lbf/in	2.05 ft-lbf/in	ASTM D 256-10, Test Method A
Temperature Properties					
Heat Deflection Temp. @ 0.45 MPa	< 30 °C	43.3 °C	< 86 °F	110 °F	ASTM D 648-07, Method B
Thermal Expansion (23 to 50° C)	117.0 µm/m/°C	145.1 µm/m/°C	65.0 µin/in/°F	80.6 µin/in/°F	ASTM E831-14

¹Material properties can vary with part geometry, print orientation, print settings, and temperature.

²Data was obtained from green parts, printed using Form 2, 100 µm, Durable settings, without additional treatments.

³Data was obtained from parts printed using Form 2, 100 µm, Durable settings and post-cured with 2.5 mW/cm² of 405 nm LED light for 120 minutes at 60°C.

Solvent Compatibility

Percent weight gain over 24 hours for a printed and post-cured 1 x 1 x 1 cm cube immersed in respective solvent:

Mechanical Properties	24 hr weight gain (%)	Mechanical Properties	24 hr weight gain (%)
Acetic Acid, 5 %	1.3	Hydrogen Peroxide (3 %)	1
Acetone	sample cracked	Isooctane	< 1
Isopropyl Alcohol	5.1	Mineral Oil, light	< 1
Bleach, ~5 % NaOCl	< 1	Mineral Oil, heavy	< 1
Butyl Acetate	7.9	Salt Water (3.5 % NaCl)	< 1
Diesel	< 1	Sodium hydroxide (0.025 %, pH = 10)	< 1
Diethyl glycol monomethyl ether	7.8	Water	< 1
Hydraulic Oil	< 1	Xylene	6.5
Skydrol 5	1.3	Strong Acid (HCl Conc)	distorted