Material Information

Durable Resin

Introduction
Formlabs Durable Resin is a polyethylene-like material with a coefficient of friction comparable to Delrin® (POM), engineered for low-friction, impact-resistant parts that demand high ductility and a smooth surface finish. It produces flexible, tough components that can deform under stress and return to their original shape without cracking.

Advantages
Durable Resin offers excellent impact resistance, ductility, and low-friction performance, making it ideal for functional parts that require repeated movement or contact.

Disadvantages
Its low modulus means it may deform under sustained load, and its relatively low HDT limits use in high-temperature environments.

Tolerance
±200µm or 0.2%

Color
Translucent White

Recommendation
Best suited for flexible, impact-resistant prototypes, low-friction moving parts, and consumer product components that require toughness and ductility.

Material Specifications			
Property	Method	Green	Post-Cured
Tensile Strength	ASTM D638-14	13MPa	28MPa
Tensile Modulus	ASTM D638-14	0.24GPa	1.0GPa

Elongation at Break	ASTM D638-14	75%	55%
Flexural Strength	ASTM D790-15	1.0MPa	24MPa
Flexural Modulus	ASTM D790-15	0.04GPa	0.66GPa
Notched Izod	ASTM D256-10	127J/m	114J/m
Unnotched Izod	ASTM D4812-11	972J/m	710J/m
Heat Deflection Temp. (0.45MPa)	ASTM D648-16	<30°C	41°C
Thermal Expansion, 0-150 °C	ASTM E831-13	124μm/m/°C	106μm/m/°C

Attention

Due to the characteristics of resin materials, products printed with resin materials will gradually turn yellow and become brittle after long-term exposure to direct sunlight. If you want to avoid this from happening, you may need to move it out of direct sunlight or add 3D Plus™ services (such as coating) to block out the sunlight.

Applications

3DSPRO finds people using Durable Resin in the following industries and applications:

Consumer product prototyping:
Hinges, snap fits, and packaging components that require flexibility and toughness.

Low-friction mechanical parts:
Bearings, bushings, and sliding assemblies with minimal wear.

Impact-resistant components:
Drop-testable housings, bumpers, and protective casings.

Wearables and ergonomic tools:
Flexible grips, handles, and skin-safe accessories.

Automotive and industrial:
Ductile brackets, clips, and cushioning elements exposed to vibration or shock.