

Acrylonitrile Butadiene Styrene (ABS) is a strong, durable production-grade thermoplastic used across many industries. ABS is an ideal material for conceptual prototyping through design verification through direct digital manufacturing. The marriage of ABS with FDM technology gives you the ability to create models directly from digital files, in a variety of standard and custom colors.



Mechanical Properties ¹	Test Method	Imperial	Metric
Tensile Strength (Type 1, 0.125")	ASTM D638	3,200 psi	22 Mpa
Tensile Modulus (Type 1, 0.125")	ASTM D638	236,000 psi	1,627 Mpa
Tensile Elongation (Type 1, 0.125")	ASTM D638	6.0%	6.0%
Flexural Strength	ASTM D790	6,000 psi	41 Mpa
Flexural Modulus	ASTM D790	266,000 psi	1,834 Mpa
IZOD Impact, notched	ASTM D256	2 ft-lb/in	106.78 J/m
IZOD Impact, un-notched	ASTM D256	4 ft-lb/in	213.56 J/m
Typical achievable tolerance	-	+/- .005 1st in.; +/- .001 every in. after	+/- .127 1st cm; +/- .025 every cm after

Thermal Properties ³	Test Method	Imperial	Metric
Heat Deflection (HDT) @ 66 psi	ASTM D648	195°F	90°C
Heat Deflection (HDT) @ 264 psi	ASTM D648	169°F	76°C
Coefficient of Thermal Expansion	ASTM D696	5.60E-05 in/in/F	-
Glass Transition Temp (Tg)	DMA (SSYS)	219°F	104°C
Melt Point	-	Not Applicable ²	Not Applicable ²

Other ³	Test Method	Value
Specific Gravity	ASTM D792	1.05
Rockwell Hardness	ASTM D785	R105
Flame Classification	UL 94	HB
Dielectric Strength kV/mm	IEC 60112	32
Dielectric Constant @ 60 Hz	IEC 60250	2.4

→ See reverse for color options and system availability.

The information presented are typical values intended for reference and comparison purposes only. They should not be used for design specifications or quality control purposes. End-use material performance can be impacted (+/-) by, but not limited to, part design, end-use conditions, test conditions, etc. Actual values will vary with build conditions. Tested parts were built on Fortus 400mc @ 0.010" (0.254 mm) slice. Product specifications are subject to change without notice.

¹Build orientation is on side long edge. ²Due to amorphous nature, material does not display a melting point. ³Literature value unless otherwise noted.



ABS

System Availability	Layer Thickness Capacity	Support Structure	Available Colors
Maxum	0.005 inch (0.127 mm)	Soluble Supports	White
	0.007 inch (0.178 mm)		Black
	0.010 inch (0.254 mm)		Steel Gray
			Red
			Blue
			Other colors upon request

At the core:

Advanced FDM Technology

Fused Deposition Modeling (FDM) is the industry's leading additive manufacturing technology. FDM systems use a wide range (the largest choice of options in the industry) of thermoplastics with advanced mechanical properties so your parts can endure high heat, caustic chemicals, sterilization, and high impact applications.

Real Accuracy

Because thermoplastics are environmentally stable, part accuracy (or tolerance) doesn't change with ambient conditions or time. This enables FDM parts to be among the most dimensionally accurate.

Get your benchmark on the future of manufacturing

Low Cost. Accurate. High Strength. The best way to see the advantages of a FDM part is to have your own model built on one of our many FDM systems. Get your parts at www.growit3d.com.

About GROWit

GROWit™ is a privately held additive manufacturing company located in Irvine, California, dedicated to improving design through engineering and rapid prototyping. We strive to be at the cutting edge, bringing both knowledge and resources directly to customers. With our team of engineers, we help guide customers to the process that best suits their specific application, without holding a bias to a specific platform or technology.

Why do we call ourselves GROWit? Due to the layer-by-layer nature of rapid prototyping, a part often looks like it is growing within the machine – just like a plant grows from the ground. Rather than using the terms “building” or “fabricating”, the term “growing” is commonly used within the industry; thus the origin of our name, GROWit.

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