

A true industrial thermoplastic, Polycarbonate (PC) is widely used in automotive, aerospace, medical and many other applications. PC offers accuracy, durability and stability, creating strong parts that withstand functional testing. It has superior mechanical properties to ABS and a number of other thermoplastics. When combined with a Fortus system, PC gives you functional prototyping, manufacturing tools, and end-use-parts.



Mechanical Properties ¹	Test Method	English	Metric
Tensile Strength (Type 1, 0.125", 0.2"/min)	ASTM D638	9,800 psi	68 Mpa
Tensile Modulus (Type 1, 0.125", 0.2"/min)	ASTM D638	330,000 psi	2,280 Mpa
Tensile Elongation (Type 1, 0.125", 0.2"/min)	ASTM D638	4.8%	4.8%
Flexural Strength (Method 1, 0.05"/min)	ASTM D790	15,100 psi	104 Mpa
Flexural Modulus (Method 1, 0.05"/min)	ASTM D790	324,000 psi	2,234 Mpa
IZOD Impact, notched (Method A, 23°C)	ASTM D256	1 ft-lb/in	53 J/m
IZOD Impact, un-notched (Method A, 23°C)	ASTM D256	6 ft-lb/in	320 J/m
Typical achievable tolerance	-	+/- .005 1st in.; +/- .001 every in. after	+/- .127 1st cm; +/- .025 every cm after

Thermal Properties ³	Test Method	English	Metric
Heat Deflection (HDT) @ 66 psi	ASTM D648	280°F	138°C
Heat Deflection (HDT) @ 264 psi	ASTM D648	261°F	127°C
Vicat Softening	ASTM D1525	282°F	139°C
Glass Transition Temp (Tg)	DMA (SSYS)	322°F	161°C
Melt Point	-	Not Applicable ²	Not Applicable ²

Other ³	Test Method	Value
Specific Gravity	ASTM D792	1.2
Flame Classification	UL94	V2 (0.043", 1.1 mm)
Coefficient of Thermal Expansion	ASTM E831	3.8E-05 in/in/°F
Rockwell Hardness	ASTM D785	R115
Dielectric Strength	IEC60112	15.0 kV/mm
Dielectric Constant @ 60 Hz	IEC 60250	3.17
Dielectric Constant @ 1 Mhz	IEC 60250	2.96

→ 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.



PC

(polycarbonate)

System Availability	Layer Thickness Capacity	Support Structure	Available Colors
Fortus 360mc	0.010 inch (0.254 mm)	BASS	White
	0.007 inch (0.178 mm)		

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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