

PC (polycarbonate)

Protofacturing 3D Production

PROTOFACTURING

3D PRODUCTION

A true industrial thermoplastic, PC (polycarbonate) is widely used in automotive, aerospace, medical and many other applications. PC offers accuracy, durability and stability, creating strong parts that withstand functional testing. A PC part manufactured by Protofacturing 3D Production is 5-60 percent stronger than a part made on previous FDM systems. It also has superior mechanical properties to ABS and a number of other thermoplastics. When combined with a Protofacturing 3D Production, PC gives you real parts for conceptual modeling, 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

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 (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	IEC 60112	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 a 400mc @ 0.010" (0.254 mm) slice. Product specifications are subject to change without notice.

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

PC (polycarbonate)



System Availability	Layer Thickness Capability	Support Structure	Available Colors
400mc	0.013 inch (0.330 mm) 0.010 inch (0.254 mm) 0.007 inch (0.178 mm)	BASS	<input type="checkbox"/> White

At the core: Advanced FDM[®] technology

FDM — Fused Deposition Modeling — technology. FDM is the industry's leading additive fabrication technology, and the only one that uses production grade thermoplastics, enabling the most durable parts.

Our systems use a wide range of thermoplastics with advanced mechanical properties so your parts can endure high heat, caustic chemicals, sterilization, and high impact applications.

Get your benchmark on the future of manufacturing

Fine details. Smooth surface finishes. Accuracy. Strength. The best way to see the advantages of a Protofacturing 3D production is to have your own part built by us. Call today

For more information about Protofacturing 3D production, materials and applications, call **514.448.4220** or visit www.protofacturing.com

Protofacturing Group Inc

3537 Ashby
Saint-Laurent, QC, H4R 2K3
514 448 4220
514 866 0147 (Fax)
www.protofacturing.com
info@protofacturing.com



protofacturing
protofacturing