



FDM PC (polycarbonate)

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 is 5-60 percent stronger than a part made on other FDM systems. It also has superior mechanical properties to ABS and a number of other thermoplastics. PC can be used 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 (T _g)	DMA (SSYS)	322°F	161°C
Melt Point	-----	Not Applicable ²	Not Applicable ²

Other ³	Test Method	Value	Available Colors
Specific Gravity	ASTM D792	1.2	☐ White
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	

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

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, etc. Actual values will vary with build conditions.

Product specifications are subject to change without notice.

The performance characteristics of these materials may vary according to application, operating conditions, or end use. Each user is responsible for determining that the material is safe, lawful and technical suitable for the intended laws and regulations. Zare makes no warranties of any kind, express or implied, including, but not limited to, the warranties of merchantability, fitness for a particular use, or warranty against patent infringement.

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