FDM Technology
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 manufactured on a Fortus® 3D Printer is 5 to 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 Fortus 3D Printer, PC gives you strong parts for conceptual modeling, functional prototyping, manufacturing tools, and production parts. PC runs the Xtend 500 Fortus Plus option, which enables more than 400 hours of unattended build time..

MECHANICAL PROPERTIES[1]	TEST METHOD	ENGLISH		METRIC	
		XZ Axis	ZX Axis	XZ Axis	ZX Axis
Tensile Strength, Yield (Type 1, 0.125", 0.2"/min)	ASTM D638	5,800 psi	4,300 psi	40 MPa	30 MPa
Tensile Strength, Ultimate (Type 1, 0.125", 0.2"/min)	ASTM D638	8,300 psi	6,100 psi	57 MPa	42 MPa
Tensile Modulus (Type 1, 0.125", 0.2"/min)	282,000 psi	284,000 psi	1,944 MPa	1,958 MPa	2,180 MPa
Tensile Elongation at Break (Type 1, 0.125", 0.2"/min)	ASTM D638	4.8%	2.5%	4.8%	2.5%
Tensile Elongation at Yield (Type 1, 0.125", 0.2"/min)	ASTM D638	2.2%	2%	2.2%	2%
Flexural Strength (Method 1, 0.05"/min) ASTM	D790	8,700 psi	7,000 psi	60 MPa	48 MPa
Flexural Modulus (Method 1, 0.05"/min) ASTM	ASTM D790	13,000 psi	9,900 psi	89 MPa	68 MPa
Flexural Strain at Break (Method 1, 0.05"/min)	ASTM D790	No break	4%	No break	4%
IZOD Impact, notched (Method A, 23 °C)	ASTM D256	1.4 ft-lb/in	0.5 ft-lb/in	73 J/m	28 J/m
IZOD Impact, un-notched (Method A, 23 °C)	ASTM D256	16.4 ft-lb/in	3.5 ft-lb/in	877 J/m	187 J/m
Compressive Strength, Yield (Met 1, 0.05"/min)	ASTM D695	10,000 psi	9,200 psi	69 MPa	64 MPa
Compressive Strength, Ultimate (Met 1, 0.05"/min)	ASTM D695	28,000 psi	9,400 psi	193 MPa	65 MPa
Compressive Modulus (Method 1, 0.05"/min)	ASTM D695	1,100,000 psi	227,000 psi	7,564 MPa	1,565 MPa

THERMAL PROPERTIES[2]	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
Melting Point	---------	Not Applicable[3]	Not Applicable[3]