



# PC-ABS

## PRODUCTION-GRADE THERMOPLASTIC FOR FORTUS 3D PRODUCTION SYSTEMS

PC-ABS (polycarbonate-ABS) is one of the most widely used industrial thermoplastics. PC-ABS offers the most desirable properties of both materials - the superior strength and heat resistance of PC and the flexibility of ABS. PC-ABS blends are commonly used in automotive, electronics and telecommunications applications. Additionally, a PC-ABS part manufactured on a Fortus® 3D Production System is 5-60 percent stronger than a part made on previous FDM® systems. When combined with a Fortus system, PC-ABS gives you Real Parts™ conceptual modeling, functional prototyping, manufacturing tools and end-use-parts.

MECHANICAL PROPERTIES <sup>1</sup>	TEST METHOD	ENGLISH	METRIC
Tensile Strength (Type 1, 0.125", 0.2"/min)	ASTM D638	5,900 psi	41 MPa
Tensile Modulus (Type 1, 0.125", 0.2"/min)	ASTM D638	278,000 psi	1,900 MPa
Tensile Elongation (Type 1, 0.125", 0.2"/min)	ASTM D638	6%	6%
Flexural Strength (Method 1, 0.05"/min)	ASTM D790	9,800 psi	68 MPa
Flexural Modulus (Method 1, 0.05"/min)	ASTM D790	280,000 psi	1,900 MPa
IZOD Impact, notched (Method A, 23°C)	ASTM D256	3.7 ft-lb/in	196 J/m
IZOD Impact, un-notched (Method A, 23°C)	ASTM D256	9 ft-lb/in	481 J/m

THERMAL PROPERTIES <sup>2</sup>	TEST METHOD	ENGLISH	METRIC
Heat Deflection (HDT) @ 66 psi	ASTM D648	230°F	110°C
Heat Deflection (HDT) @ 264 psi	ASTM D648	205°F	96°C
Vicat Softening Temperature	ASTM D1525	234°F	112°C
Glass Transition Temperature (Tg)	DMA (SSYS)	257°F	125°C
Coefficient of Thermal Expansion	-----	4.10 E -05 in/in/°F	-----
Melt Point	-----	Not Applicable <sup>3</sup>	Not Applicable <sup>3</sup>

ELECTRICAL PROPERTIES <sup>4</sup>	TEST METHOD	VALUE RANGE
Volume Resistivity	ASTM D257	2.0x10e14 - 4.4x10e13 ohm-cm
Dielectric Constant	ASTM D150-98	2.9 - 2.7
Dissipation Factor	ASTM D150-98	.0035 - .0032
Dielectric Strength	ASTM D149-09, Method A	340 - 90 V/mil



# PC-ABS

## PRODUCTION-GRADE THERMOPLASTIC FOR FORTUS 3D PRODUCTION SYSTEMS



OTHER <sup>2</sup>	TEST METHOD	VALUE
<b>Specific Gravity</b>	ASTM D792	1.10
<b>Density</b>	ASTM D792	0.0397 lb/in <sup>3</sup>
<b>Flame Classification</b>	UL94	HB
<b>Rockwell Hardness</b>	ASTM D785	R110
<b>UL File Number</b>	-----	E345258

System Availability	Layer Thickness Capability	Support Structure	Available Colors
<b>Fortus 360mc</b>	0.013 inch (0.330 mm)	Soluble Supports	■ Black
<b>Fortus 380mc</b>	0.010 inch (0.254 mm)		
<b>Fortus 400mc</b>	0.007 inch (0.178 mm)		
<b>Fortus 450mc</b>	0.005 inch (0.127 mm) <sup>5</sup>		
<b>Fortus 900mc</b>			

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.

The performance characteristics of these materials may vary according to application, operating conditions, or end use. Each user is responsible for determining that the Stratasys material is safe, lawful, and technically suitable for the intended application, as well as for identifying the proper disposal (or recycling) method consistent with applicable environmental laws and regulations. Stratasys 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.

<sup>1</sup>Build orientation is on side long edge.

<sup>2</sup>Literature value unless otherwise noted.

<sup>3</sup>Due to amorphous nature, material does not display a melting point.

<sup>4</sup>All Electrical Property values were generated from the average of test plaques built with default part density (solid). Test plaques were 4.0 x 4.0 x 0.1 inches (102 x 102 x 2.5 mm) and were built both in the flat and vertical orientation. The range of values is mostly the result of the difference in properties of test plaques built in the flat vs. vertical orientation.

<sup>5</sup> 0.005 inch (0.127 mm) layer thickness not available for Fortus 900mc