

# ABSi

## Production-Grade Thermoplastic for Fortus 3D Production Systems



Fortus® 3D Production Systems give engineers the ability to manufacture real industrial thermoplastic parts direct from digital files. Stratasys ABSi is an ideal material for conceptual modeling, functional prototyping and direct digital manufacturing. Its strength is superior to standard Stratasys ABS, and the translucent nature of ABSi is beneficial for monitoring material flow and light transmission, most commonly used for medical and automotive applications. When combined with a Fortus 3D production system, ABSi gives you Real Parts™ that are visually unique, dimensionally accurate, durable and hold their shape over time.

Mechanical Properties <sup>1</sup>	Test Method	English	Metric
Tensile Strength (Type 1, 0.125", 0.2"/min)	ASTM D638	5,400 psi	37 MPa
Tensile Modulus (Type 1, 0.125", 0.2"/min)	ASTM D638	277,700 psi	1,920 MPa
Tensile Elongation (Type 1, 0.125", 0.2"/min)	ASTM D638	4.4%	4.4%
Flexural Strength (Method 1, 0.05"/min)	ASTM D790	8,980 psi	62 MPa
Flexural Modulus (Method 1, 0.05"/min)	ASTM D790	278,000 psi	1,920 MPa
IZOD Impact, notched (Method A, 23°C)	ASTM D256	1.8 ft-lb/in	96.4 J/m
IZOD Impact, un-notched (Method A, 23°C)	ASTM D256	3.6 ft-lb/in	191.1 J/m

Thermal Properties <sup>2</sup>	Test Method	English	Metric
Heat Deflection (HDT) @ 66 psi, 0.125" unannealed	ASTM D648	188°F	86°C
Heat Deflection (HDT) @ 264 psi, 0.125" unannealed	ASTM D648	163°F	73°C
Glass Transition Temperature (T <sub>g</sub> )	DMA (SSYS)	240°F	116°C
Coefficient of Thermal Expansion	ASTM D696	6.7 E -06 in/in/°F	12.1 E -05 mm/mm/°C
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	6.1x10e10 - 1.5x10e9 ohms
Dielectric Constant	ASTM D150-98	3.6 - 3.4
Dissipation Factor	ASTM D150-98	0.15 - 0.12
Dielectric Strength	ASTM D149-09, Method A	320 - 100 V/mil



Other <sup>2</sup>	Test Method	Value
Specific Gravity	ASTM D792	1.08
Rockwell Hardness	ASTM D785	R108
Flame Classification	UL 94	HB (0.059", 1.5 mm)

System Availability	Layer Thickness Capability	Support Structure	Available Colors
Fortus 400mc	0.013 inch (0.330 mm)	Soluble Supports	<input type="checkbox"/> Translucent Natural
Fortus 900mc	0.010 inch (0.254 mm)		<input checked="" type="checkbox"/> Translucent Amber
	0.007 inch (0.178 mm)		<input checked="" type="checkbox"/> Translucent Red
	0.005 inch (0.127 mm)		

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 Stratasy 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. Stratasy 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.

## For More Information Contact:



**Phoenix Analysis & Design Technologies**  
[www.PADTINC.com](http://www.PADTINC.com)  
 480.813.4884  
[sales@padtinc.com](mailto:sales@padtinc.com)

**Stratasy Sales and Support**  
 Arizona - Colorado - New Mexico - Utah

**Stratasy | [www.stratasy.com](http://www.stratasy.com) | [info@stratasy.com](mailto:info@stratasy.com)**

7665 Commerce Way  
 Eden Prairie, MN 55344  
 +1 888 480-3548 (US Toll Free)  
 +1 952 937-3000 (Intl)  
 +1 952 937-0070 (Fax)

2 Holtzman St.,  
 Science Park, PO Box 2496  
 Rehovot 76124, Israel  
 +972 74 745-4000  
 +972 74 745-5000 (Fax)

Local Street Address  
 City, State, Zip  
 Phone #  
 Fax #

©2013 Stratasy Inc. All rights reserved. Stratasy, FDM, Fortus and Finishing Touch are registered trademarks of Stratasy Inc. FDM Technology, Fused Deposition Modeling, Fortus 200mc, Fortus 250mc, Fortus 360mc, Fortus 400mc, Fortus 900mc, Insight, Control Center, FDM Team, Smart Supports, SR-30, SR-100, ABSplus, ABS-ESD7, and TouchWorks are trademarks of Stratasy, Inc. \*ULTEM is a trademark of SABIC Innovative Plastics IP BV. All other trademarks are the property of their respective owners, and Stratasy assumes no responsibility with regard to the selection, performance, or use of these non-Stratasy products. Product specifications subject to change without notice. Printed in the USA. FortusABSiMaterialSpecSheet-US-1013

## At the core:

### Advanced FDM Technology™

Fortus systems are based on patented Stratasy FDM (Fused Deposition Modeling) technology. FDM is the industry's leading additive manufacturing technology, and the only one that uses production grade thermoplastics, enabling the most durable parts.

Fortus 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.

### No special facilities needed

You can install a Fortus 3D Production System just about anywhere. No special venting is required because Fortus systems don't produce noxious fumes, chemicals, or waste.

### No special skills needed

Fortus 3D Production Systems are easy to operate and maintain compared to other additive fabrication systems because there are no messy powders or resins to handle and contain. They're so simple, an operator can be trained to operate a Fortus system in less than 30 minutes.

### Get your benchmark on the future of manufacturing

Fine details. Smooth surface finishes. Accuracy. Strength. The best way to see the advantages of a Fortus 3D Production System is to have your own part built on a Fortus system. Get your free part at: [stratasy.com](http://stratasy.com).