



# 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. ABSi™ is an ideal material for conceptual modeling, functional prototyping and direct digital manufacturing. Its strength is superior to standard 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 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 (Tg)                  | DMA (SSYS)  | 240°F              | 116°C               |
| Coefficient of Thermal Expansion                   | ASTM D696   | 6.7x10-06 in/in/°F | 12.1x10-05 mm/mm/°C |
| Melting Point                                      | -----       | Not Applicable3    | Not Applicable3     |

| ELECTRICAL PROPERTIES <sup>4</sup> | TEST METHOD            | VALUE RANGE               |
|------------------------------------|------------------------|---------------------------|
| Volume Resistivity                 | ASTM D257              | 1.5x109 - 6.1x1010 ohm-cm |
| Dielectric Constant                | ASTM D150-98           | 3.4 - 3.6                 |
| Dissipation Factor                 | ASTM D150-98           | 0.12 - 0.15               |
| Dielectric Strength                | ASTM D149-09, Method A | 100 - 320 V/mil           |





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### At the core:

#### Advanced FDM Technology

Fortus systems are based on Stratasys® 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 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.

| 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<br>AVAILABILITY | LAYER THICKNESS<br>CAPABILITY | SUPPORT<br>STRUCTURE | AVAILABLE<br>COLORS   |
|------------------------|-------------------------------|----------------------|-----------------------|
| Fortus 400mc™          | 0.013 inch (0.330 mm)         | Soluble Supports     | ■ Translucent Natural |
| Fortus 900mc™          | 0.010 inch (0.254 mm)         |                      | ■ Translucent Amber   |
|                        | 0.007 inch (0.178 mm)         |                      | ■ 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 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.

# stratasys

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