

ABS FDM Material Properties

A true industrial thermoplastic, ABS is widely used throughout industry. When combined with the Fused Deposition Modeling (FDM) systems by Stratasys, this material is ideal for the rapid production of prototypes, tooling and the direct manufacturing (tool-less) of production parts.

MECHANICAL PROPERTIES¹

	Test Method	Imperial	Metric
Tensile Strength, Type 1, 0.125	ASTM D638	3,200 psi	22 MPa
Tensile Modulus, Type 1, 0.125	ASTM D638	236,000 psi	1,627 MPa
Tensile Elongation, Type 1, 0.125	ASTM D638	6 %	6 %
Flexural Strength	ASTM D790	6,000 psi	41 MPa
Flexural Modulus	ASTM D790	266,000 psi	1,834 MPa
IZOD Impact, un-notched	ASTM D256	4 ft-lb/in	
IZOD Impact, notched	ASTM D256	2 ft-lb/in	

THERMAL PROPERTIES

Heat Deflection (HDT)	ASTM D648	205 °F	96 °C
Glass Transition (Tg)	DMA (SSYS)	219 °F	104 °C
Melt Point		Not Applicable ²	Not Applicable ²

OTHER

Specific Gravity	1.05
Vertical Burning Test	HB, UL94
Coefficient of Thermal Expansion	5.60E-05 in/in/F
Rockwell Hardness	R105
Dielectric S (kV/mm)	32
Dielectric C (60Hz)	2.4

APPEARANCE

- White available on all FDM systems
- Colors available on the FDM Maxum include:
 - Black, Blue, Green, Grey (light), Grey (steel), Red and Yellow
 - Custom color program available
- Colors available on FDM Prodigy Plus
 - Black, Blue, Green, Red and Yellow
 - Custom color program available

SYSTEM AVAILABILITY

- FDM Maxum
- FDM Titan **TI**
- FDM Vantage **SE**
- FDM Vantage **S**
- FDM Vantage **i** (when configured with ABS)
- FDM Prodigy Plus

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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.

Product specifications are subject to change without notice.

¹ Build orientation is on side edge

² Due to amorphous nature, material does not display a melting point