ABS

(Acrylonitrile Butadiene Styrene)

Technical Data Sheet

Tensile Properties ASTM D638 - Type V		
Property	**Imperial**	**Metric**
Toughness*	1.57 ft·lb/in2	3.3 KJ/m2
Tensile Modulus	246000 psi	2.3 GPa
Ultimate Tensile Strength	3830 psi	26.4 MPa
Tensile Strength at Yield	5200 psi	35.9 MPa
Elongation at Yield	4%	4%
Elongation at Break	8%	8%
3D Printing Properties		
Property	**Imperial**	**Metric**
Expected Max Linear Print Speed	3.54 in/s	90 mm/s
Hardness, **ASTM D2240**	109.5D	109.5D
Solid Density, **ASTM D792**	1.17 x 10-3 slug/in3	1.04 g/cc
Impact Properties		
Property	**Imperial**	**Metric**
Notched Izod (machined), 23 C, **ASTM D256**	2.6 f·lb/in	139 J/m
Gardner Impact, 23 C, **ASTM D5420**	22.9 ft·lb	31.1 J
Thermal Properties		
Property	**Imperial**	**Metric**
Glass Transition by DSC, **ASTM E1356**	221 F	105 C
Glass Transition by DMA, **ASTM D792**	226 F	108 C
Heat Deflection Temperature, **ASTM D648**	105 F	96 C
Coefficient of Thermal Expansion, **ASTM E832**	40 x 10-6 in/inR	72 x 10-6 m/m·K
Heat Capacity, **ASTM E1269**	0.400 Btu/lb/°F	1,670 J/kg·K
Thermal Conductivity, **ASTM C518**	1.2 Btu·in/hr/ft²/°F	0.173 W/m·K
Available Colors		
Black, Blue, Green, Grey, Natural, Orange, Red, White, Yellow		
Suggested Uses		
ABS is one of the most cost-effective FDM printing materials. ABS is best used in mechanical applications due to it's strength, high glass transition temperature and ability to bend before breaking.		

*Toughness is not defined in ASTM D638 though can be calculated by taking the integral of the stress-strain curve collected by tensile data.

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