

## ASA

### APPLICATIONS

ASA is poised to become the most popular all-purpose prototyping material for FDM Production Systems thanks to exceptional UV stability and the best aesthetics of any FDM® thermoplastic. Matching or exceeding the mechanical properties of ABS, ASA may be your new favorite general prototyping material.

Its UV-resistance makes it especially suited in end-use parts for outdoor commercial and infrastructure use. And its wide selection of colors and matte finish makes it ideal for attractive prototypes in consumer sporting goods, tools and automotive components and accessories.

Mechanical Properties <sup>1</sup>	Test Method	English		Metric	
		XZ Axis	XZ Axis	XZ Axis	XZ Axis
Tensile Strength (Type 1, 0.125", 0.2"/min)	ASTM D638	7,000 psi	6,400 psi	48 MPa	44 MPa
Tensile Modulus (Type 1, 0.125", 0.2"/min)	ASTM D638	190,000 psi	180,000 psi	1,310 MPa	1,241 MPa
Elongation at Break (Type 1, 0.125", 0.2"/min)	ASTM D638	30%	5%	30%	5%
Elongation at Yield (Type 1, 0.125", 0.2"/min)	ASTM D638	6.5%	5%	6.5%	5%
Flexural Strength (Method 1, 0.05"/min)	ASTM D790	10,000 psi	8,600 psi	69 MPa	59 MPa
Flexural Modulus (Method 1, 0.05"/min)	ASTM D790	190,000 psi	180,000 psi	1,310 MPa	1,241 MPa
Flexural Strain at Break (Method 1, 0.05"/min)	ASTM D790	No Break	>10%	No Break	>10%
IZOD impact - notched (Method A, 23°C)	ASTM D256	3.7 ft-lb/in	75.0 ft-lb/in	200 J/m	75 J/m
IZOD impact - unnotched (Method A, 23°C)	ASTM D256	>37.4 ft-lb/in	3.7 ft-lb/in	>2,000 J/m	200 J/m

Thermal Properties <sup>2</sup>	Test Method	English	Metric
Heat Deflection (HDT) @ 66 psi	ASTM D648	208°F	98°C
Heat Deflection (HDT) @ 264 psi	ASTM D648	196°F	91°C
Vicat Softening Temperature (Rate B/50)	ASTM D1525	217°F	103°C
Glass Transition Temperature (Tg)	DMA (SSYS)	226°F	108°C
Coefficient of Thermal Expansion (flow)	ASTM E831	4.90E-06 in/in/°F	8.79E-06 mm/mm/°C
Coefficient of Thermal Expansion (xflow)	ASTM E831	4.60E-06 in/in/°F	8.28E-06 mm/mm/°C

Electrical Properties <sup>4</sup>	Test Method	Orientation	Value Range
Volume Resistivity	ASTM D257	XZ	1.0E14 - 1.0E15 ohm-cm
Dielectric Constant	ASTM D150-98	XZ	2.97 - 3.04
Dissipation Factor	ASTM D150-98	XZ	0.009
Dielectric Strength	ASTM D149-09, Method A	XZ	329 V/mil
Dielectric Strength	ASTM D149-09 Method A	ZX	414 V/mil

1- Build orientation is on side long edge.  
2- Literature value unless otherwise noted.

3 - Due to amorphous nature, material does not display a melting point.  
4 - All electrical property values were generated from the average of test plaques built with default part density (solid).