



3D COMPOSITES

Transforming ideas into 3-dimensional objects



ASA

Now you can build consistently high-quality parts with exceptional UV stability and the best aesthetics of any FDM thermoplastic. ASA is poised to become the most popular all-purpose prototyping material. 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. Its matte finish makes it ideal for attractive prototypes in consumer sporting goods, tools and automotive components and accessories.

Color options: Ivory, white, light gray, dark gray, black, red, dark blue, green, yellow, and orange

MECHANICAL PROPERTIES/ TEST METHOD	STANDARD	ENGLISH		METRIC	
		XZ Axis	ZX Axis	XZ Axis	ZX Axis
Tensile Strength, Yield (Type 1, 0.125", 0.2"/min)	ASTM D638	4,200 psi	3,850 psi	29 MPa	27 MPa
Tensile Modulus, Ultimate (Type 1, 0.125", 0.2"/min)	ASTM D638	4,750 psi	4,300 psi	33 MPa	30 MPa
Tensile Modulus (Type 1, 0.125", 0.2"/min)	ASTM D638	290,000 psi	280,000 psi	2,010 MPa	1,950 MPa
Elongation at Break (Type 1, 0.125", 0.2"/min)	ASTM D638	9%	3%	9%	3%
Elongation at Yield (Type 1 0.125", 0.2"/min)	ASTM D638	2%	2%	2%	2%
Flexural Strength (Method 1, 0.05"/min)	ASTM D790	8,700 psi	6,900 psi	60 MPa	48MPa
Flexural Modulus (Method 1, 0.05"/min)	ASTM D790	270,000 psi	240,000 psi	1870 MPa	1,630 MPa
Flexural Strain at Break (Method 1 0.05"/min)	ASTM D790	No Break	4%	No Break	4%



MECHANICAL PROPERTIES/TEST METHOD	STANDARD	ENGLISH	METRIC
Notched Impact, XZ orientation (Method A, 23°C)	ASTM D256	1.2 ft-lb/in	64 J/m
Unnotched Impact XZ orientation (Method A, 23°C)	ASTM D256	6 ft-lb/in	321 J/m

THERMAL PROPERTIES	TEST METHOD	ENGLISH	METRIC
Heat Deflection (HDT) @ 66 psi	ASTM D648	208° F	98°
Heat Deflection (HDT) @264 psi	ASTM D648	196° F	91°
Vicat Softening Temperature (Rate B/50)	ASTM D1525	217° F	103° C
Glass Transition (Tg)	DSC (SSYS)	4.9E-05in/in/° F	8.82-05mm/mm/°C
Coefficient of Thermal Expansion (flow)	ASTM E831	4.9E-05in/in/° F	8.82-05mm/mm/°C
Coefficient of Thermal Expansion (xflow)	ASTM 831	4.7E-05in/in/° F	8.46-05mm/mm/°C

ELECTRICAL PROPERTIES	TEST METHOD	ORIENTATION	VALUE RANGE
Volume Resistivity	ASTM D257	XZ Axis	1.0E14 – 1.0E15 ohm-cm
Dielectric Constant	ASTM D150-98	XZ Axis	2.97 – 3.04
Dissipation Factor	ASTM D150-98	XZ Axis	0.009
Dielectric Strength	ASTM D149-09, Method A	XZ Axis	329 V/mil
Dielectric Strength	ASTM D149-09 Method A	ZX Axis	414 V/mil

OTHER	TEST METHOD	VALUE
Specific Gravity	ASTM D792	1.05
Flame Classification	UL94	HB
Rockwell Hardness	ASTM D785	82
UL File Number	-----	345258