

ASA

A UV-Stable, Production-Grade Thermoplastic
for Fortus® 3D Production Systems

Mechanical Properties

Test Method	Standard	Metric (XZ)	Metric (ZX)	English (XZ)	English (ZX)
Tensile Strength, Yield (Type 1, 0.125", 0.2"/min)	ASTM D638	4,200 psi	3,850 psi	4,200 psi	3,850 psi
Tensile Strength, Ultimate (Type 1, 0.125", 0.2"/min)	ASTM D638	4,750 psi	4,300 psi	4,750 psi	4,300 psi
Tensile Modulus (Type 1, 0.125", 0.2"/min)	ASTM D638	290,000 psi	280,000 psi	290,000 psi	280,000 psi
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	8,700 psi	6,900 psi
Flexural Modulus (Method 1, 0.05"/min)	ASTM D790	270,000 psi	240,000 psi	270,000 psi	240,000 psi
Flexural Strain at Break (Method 1, 0.05"/min)	ASTM D790	No Break	4%	No Break	4%

Thermal Properties²

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

Electrical Properties

Property	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

Mechanical Properties

Test Method	Standard	Metric	English
Notched Impact, XZ orientation (Method A, 23°C)	ASTM D256	64 J/m	1.2 ft-lb/in
Unnotched Impact, XZ orientation (Method A, 23°C)	ASTM D256	321 J/m	6 ft-lb/in

Other Properties

Property	Test Method	Value
Specific Gravity	ASTM D792	1.05
Flame Classification	UL94	HB
Rockwell Hardness	ASTM D785	82

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