



FDM® Nylon 12 is the first material in Stratasys' new family of nylon offerings, complementing the current portfolio of FDM materials and enabling new applications requiring: repetitive snap fits, high fatigue resistance, strong chemical resistance and press (friction) fit inserts. Nylon 12 is primarily used in aerospace, automotive and consumer goods industries to take on everything from tooling, jigs and fixtures to covers, panels and vibration resistant components. For use with Fortus® 360mc™, 380mc™, 400mc™, 450mc™ and 900mc™ 3D Production Systems, FDM® Nylon 12 offers unparalleled toughness and a simple, clean process - free of powders.

MECHANICAL PROPERTIES (CONDITIONED)	TEST METHOD	ENGLISH		METRIC	
		XZ AXIS	ZX AXIS	XZ AXIS	ZX AXIS
Tensile Strength, Yield [Type 1, 0.125", 0.2"/min]	ASTM D638	4,600 psi	4,100 psi	32 MPa	28 MPa
Tensile Strength, Ultimate [Type 1, 0.125", 0.2"/min]	ASTM D638	6,650 psi	5,630 psi	46 MPa	38.5 MPa
Tensile Modulus [Type 1, 0.125", 0.2"/min]	ASTM D638	186,000 psi	165,000 psi	1,282 MPa	1,138 MPa
Elongation at Break [Type 1, 0.125", 0.2"/min]	ASTM D638	30%	5.4%	30%	5.4%
Elongation at Yield [Type 1, 0.125", 0.2"/min]	ASTM D638	2.4%	2.7%	2.4%	2.7%
Flexural Strength [Method 1, 0.05"/min]	ASTM D790	9,700 psi	8,800 psi	67 MPa	61 MPa
Flexural Modulus [Method 1, 0.05"/min]	ASTM D790	185,000 psi	171,000 psi	1,276 MPa	1,180 MPa
Flexural Strain at Break	ASTM D790	No Break	>10%	No Break	>10%
IZOD impact - notched [Method A, 23 °C]	ASTM D256	2.5 ft-lb/in	1 ft-lb/in	135 J/m	53 J/m
IZOD impact - unnotched [Method A, 23 °C]	ASTM D256	31 ft-lb/in	3.7 ft-lb/in	1,656 J/m	200 J/m
Compressive Strength, Yield [Method 1, 0.05"/min]	ASTM D695	7,400 psi	7,900 psi	51 MPa	55 MPa
Compressive Strength, Ultimate [Method 1, 0.05"/min]	ASTM D695	24,200 psi	800 psi	167 MPa	6 MPa
Compressive Modulus [Method 1, 0.05"/min]	ASTM D695	730,000 psi	155,000 psi	5,033 MPa	1,069 MPa



MATERIAL DATA SHEET

MECHANICAL PROPERTIES (UNCONDITIONED / DRY)	TEST METHOD	ENGLISH		METRIC	
		XZ AXIS	ZX AXIS	XZ AXIS	ZX AXIS
Tensile Strength, Yield (Type 1, 0.125", 0.2"/min)	ASTM D638	7,700 psi	6,900 psi	53 MPa	48 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	9.5%	5%	9.5%	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	0 MPa	0 MPa
Flexural Modulus (Method 1, 0.05"/min)	ASTM D790	190,000 psi	180,000 psi	0 MPa	0 MPa
Flexural Strain at Break	ASTM D790	No Break	>10%	No Break	>10%
IZOD impact - notched (Method A, 23 °C)	ASTM D256	2.8 ft-lb/in	0.9 ft-lb/in	150 J/m	50 J/m
IZOD impact - unnotched (Method A, 23 °C)	ASTM D256	>37.4 ft-lb/in	5.1 ft-lb/in	>2,000 J/m	275 J/m

THERMAL PROPERTIES	TEST METHOD	ENGLISH	METRIC
Heat Deflection (HDT) @ 66 psi annealed	ASTM D648	207 °F	97 °C
Heat Deflection (HDT) @ 66 psi unannealed	ASTM D649	167 °F	75 °C
Heat Deflection (HDT) @ 264 psi annealed	ASTM D650	180 °F	82 °C
Heat Deflection (HDT) @ 264 psi unannealed	ASTM D651	131 °F	55 °C
Melting Point	-----	352 °F	178 °C

OTHER	TEST METHOD	VALUE
Specific Gravity	ASTM D792	1.00
Flame Classification	UL94	HB
UL File Number	-----	E345258

