

# DuPont™ Zytel® 3D10C20FL BK544

High Performance Material for 3D Printing

## Developmental Data

### Product Information

Zytel® 3D10C20FL BK544 is a 20% carbon fiber reinforced long chain polyamide material in filament form for fused filament fabrication.

Material Specific Properties	Value	Unit	Test Standard
Density	1.15	g/cm <sup>3</sup>	ISO 1183
Melting Temperature, 10°C/min	198	°C	ISO 11357-1/-3
Typical Properties of Printed Parts	Value	Unit	Test Standard
Tensile Stress at Break	80	MPa	ISO 527 (Type 1A)
Tensile Strain at Break	3	%	ISO 527 (Type 1A)
Tensile Modulus	5700	MPa	ISO 527 (Type 1A)
Izod Impact - Notched	14	kJ/m <sup>2</sup>	ISO 180/1A
Izod Impact - Unnotched	38	kJ/m <sup>2</sup>	ISO 180/1U
Deflection Temperature Under Load, 0.45MPa	166	°C	ISO 75

The above data are for developmental samples and are subject to change.

DuPont Zytel® 3D10C20FL BK544 is capable of being printed on a variety of printers in a variety of configurations. Different printers, slicing and/or printing configurations, test conditions, ambient environments, etc. may give different results.

Reported above are typical results obtained from test parts prepared from filament dried under vacuum at 80 - 90°C for 12 - 24 h. The printer settings were as follows: Nozzle Temperature: 275°C; Bed Temperature: 85°C; Printing Speed: 30 mm/sec; Cooling Fan: Off; Infill: 100% Diagonal Line; Flow: 100%; Retraction Speed: 10 mm/sec; Retraction Distance: 1 mm; Printing orientation: All test specimens were printed using Flat orientation except DTUL, which was Edge orientation.

Test specimens were stored under nitrogen and then vacuum-sealed in aluminum-lined bags prior to testing. The tests were then run at 23°C and 50% relative humidity on the dry-as-printed (DAP) test parts.

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