




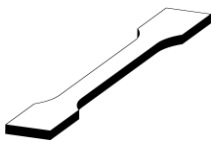
NYLFORCE CARBON TECHNICAL DATASHEET

Minerva3D
info@minerva3d.com

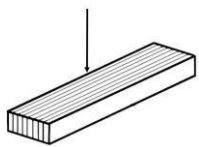
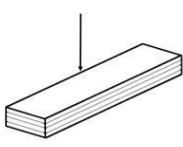
Nylforce Carbon Technical Datasheet ¹

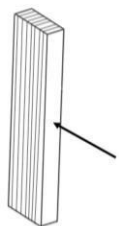
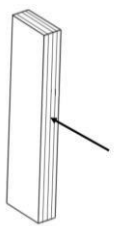
IDENTIFICATION	
Raw Material	Carbon Fiber Reinforced PA
Use	3D printing applications
Manufacturer	FiberForce Italy srl – Vicolo Dotti 4, 31100 Treviso (ITALY)

PHYSICAL PROPERTIES	VALUE	STANDARD
Density	1,00 g/cc	ISO 1183

MECHANICAL PROPERTIES						
TENSILE TEST – STANDARD ISO 527						
Test specimens printed on Ultimaker 2+ with the following setup: - Nozzle type: Olsson Ruby - Nozzle Temperature: 260 °C - Heat bed Temp: 70 °C - Print speed: 40 mm/s - Infill orientation: 45°	 xz			 xy		
	Infill	15%	50%	100%	15%	50%
Tensile strength (Mpa)	12,5	14,46	12,64	33,7	36,6	66,3
Elastic Modulus (Mpa)	1292	1343	1513	1844	1875	2758
Elongation at break (%)	2,1	2,3	2,0	5,7	6,3	6,7
Energy at break (J)	0,63	0,78	0,64	5,45	7,02	12,2

¹ All the presented data comes from the manufacturer
 NYLFORCE CARBON Technical datasheet

FLEXURAL TEST – STANDARD ISO 178				
Test specimens printed on Ultimaker 2+ with the following setup: - Nozzle type: Olsson Ruby - Nozzle Temperature: 260 °C - Heat bed Temp: 70 °C - Print speed: 40 mm/s - Infill orientation: 45 °C	zy- parallel		xy- normal	
				
Infill	50%	100%	50%	100%
Flexural strength (Mpa)	108,9	117,9	79,5	113,8
Flexural Modulus (Mpa)	3368	3956	2427	3606
Deformation (%)	5,0	5,0	5,2	5,4

IMPACT TEST IZOD – STANDARD ISO 180						
Test specimens printed on Ultimaker 2+ with the following setup: - Nozzle type: Olsson Ruby - Nozzle Temperature: 260 °C - Heat bed Temp: 70 °C - Print speed: 40 mm/s - Infill orientation: 45°	zy- normal			xy- parallel		
						
Infill	15%	50%	100%	15%	50%	100%
Impact strength (KJ/m ²)	36,5	37,47	42,15	29,0	29,8	41,1
Impact Energy (J)	1,46	1,50	1,68	1,16	1,19	1,64

THERMAL PROPERTIES	VALUE	STANDARD
Melting Point	180 °C	ISO 11357
Heat Deflection Temp.	155 °C	ISO 75
Max Usage Temperature	Long Term 90 – 120 °C	ISO 2578
Max Usage Temperature	Short Term 150 °C	ISO 2578

OTHER PROPERTIES	VALUE	STANDARD
Flammability	HB	ISO 1210
Ball Indentation Hardness	110 Mpa	ISO 2039-1
Specific Volume Resistivity	10 ³ Ωm	IEC 60243

FILAMENT SPECIFICATIONS AND PRINT SETTINGS

Diameter 1.75mm	1.75 ± 0.05 mm
Diameter 2.85mm	2.85 ± 0.05 mm
Roundness deviation	max 2%
Suggested Print Temperature	250 – 265 °C
Suggested Print Speed	40 mm/s
Suggested Bed Temperature	60 – 70 °C
Cooling fan	20 – 60 %