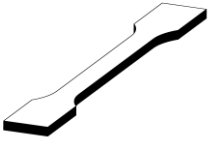


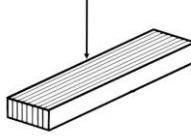
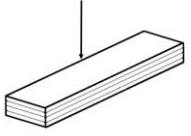
Technical Data Sheet

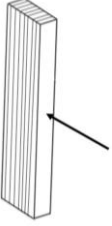
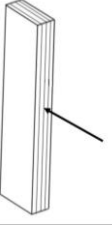
NYLFORCE³

IDENTIFICATION	
Commercial name	Nylforce ³
Raw Material	Polyamide 12
Use	3D printing applications
Manufacturer	FiberForce Italy srl – Vicolo Del Cristo 4, 31100 Treviso (ITALY)

PHYSICAL PROPERTIES	VALUE	STANDARD
Density	1,03 g/cc	ISO 1183

MECHANICAL PROPERTIES			
TENSILE TEST – STANDARD ISO 527			
Test specimens printed on Ultimaker 2+ with the following setup: <ul style="list-style-type: none"> - Nozzle type: Standard Brass 0.4 - Nozzle Temperature: 250 °C - Heat bed Temp: 85 °C - Print speed: 35 mm/s - Infill orientation: 45 °C - Cooling fan: OFF 	xy		
			
Infill	15%	50%	100%
Tensile strength (Mpa)	20,7	27,4	41,1
Elastic Modulus (Mpa)	881,9	1044,0	1529,0
Elongation at break (%)	13,94	25,32	31,30
Energy at break (J)	10,48	27,92	49,70

FLEXURAL TEST – STANDARD ISO 178				
Test specimens printed on Ultimaker 2+ with the following setup: <ul style="list-style-type: none"> - Nozzle type: Standard Brass 0.4 - Nozzle Temperature: 250 °C - Heat bed Temp: 85 °C - Print speed: 35 mm/s - Infill orientation: 45 °C - Cooling fan: OFF 	zy- parallel		xy- normal	
				
Infill	50%	100%	50%	100%
Flexural strength (Mpa)	63,5	75,2	53,3	70,12
Flexural Modulus (Mpa)	1255	1518	1140	1371
Deformation (%)	6,44	6,87	6,68	7,05

IMPACT TEST IZOD - NOTCHED – STANDARD ISO 180				
Test specimens printed on Ultimaker 2+ with the following setup: <ul style="list-style-type: none"> - Nozzle type: Standard Brass 0.4 - Nozzle Temperature: 250 °C - Heat bed Temp: 85 °C - Print speed: 35 mm/s - Infill orientation: 45 °C - Cooling fan: OFF 	zy- normal		xy- parallel	
				
Infill	50%	100%	50%	100%
Impact strength (KJ/m²)	60,5	36,1	14,1	27,4
Impact Energy (J)	0,976	1,156	0,450	0,878

THERMAL PROPERTIES	VALUE		STANDARD
Melting Point	178 °C		ISO 11357
Heat Deflection Temp. @0,45MPa	125 °C		ISO 75
Max Usage Temperature	Long Term	80 - 95 °C	ISO 2578
Max Usage Temperature	Short Term	140 °C	ISO 2578

OTHER PROPERTIES	VALUE	STANDARD
Flammability	HB	ISO 1210
Shore Hardness	70-D	ISO 868
Specific Volume Resistivity	10 ¹¹ Ωm	IEC 60093

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	245 – 255 °C
Suggested Print Speed	30 – 40 mm/s
Suggested Bed Temperature	85 °C
Cooling fan	OFF