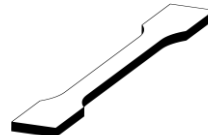


## Technical Data Sheet

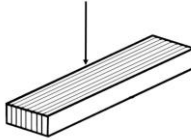
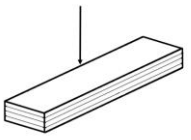
# SMART ABS

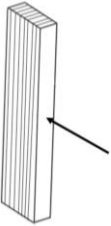
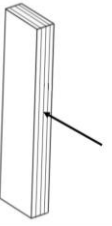
IDENTIFICATION	
Commercial name	SMART ABS
Raw Material	ABS Based Compound
Use	3D printing applications
Manufacturer	FiberForce Italy srl – Vicolo Dotti 4, 31100 Treviso (ITALY)

PHYSICAL PROPERTIES	VALUE	STANDARD
Density	1,03 g/cc	ISO 1183
Ball Indentation Hardness	74 MPa	ISO 2039-1

MECHANICAL PROPERTIES			
TENSILE TEST – STANDARD ISO 527			
Test specimens printed on Ultimaker 2+ with the following setup: <ul style="list-style-type: none"> <li>- Nozzle type: Standard Brass 0.4</li> <li>- Nozzle Temperature: 230 °C</li> <li>- Heat bed Temp: 85 °C</li> <li>- Print speed: 30 mm/s</li> <li>- Infill orientation: 45 °C</li> <li>- Cooling fan: 20%</li> </ul>	xy		
			
Infill	15%	50%	100%
Tensile strength (Mpa)	14,6	17,4	27,4
Elastic Modulus (Mpa)	964,5	1095,5	1651,0
Elongation at break (%)	3,39	5,14	4,52
Energy at break (J)	1,45	3,06	3,82



FLEXURAL TEST – STANDARD ISO 178				
Test specimens printed on Ultimaker 2+ with the following setup: - Nozzle type: Standard Brass 0.4 - Nozzle Temperature: 230 °C - Heat bed Temp: 85 °C - Print speed: 30 mm/s - Infill orientation: 45 °C - Cooling fan: 20%	<b>zy- parallel</b>		<b>xy- normal</b>	
				
<b>Infill</b>	50%	100%	50%	100%
<b>Flexural strength (Mpa)</b>	48,5	55,5	44,76	56,4
<b>Flexural Modulus (Mpa)</b>	1534	1697	1363	1622
<b>Deformation (%)</b>	3,34	4,5	4,6	4,9

IMPACT TEST IZOD – STANDARD ISO 180				
Test specimens printed on Ultimaker 2+ with the following setup: - Nozzle type: Standard Brass 0.4 - Nozzle Temperature: 230 °C - Heat bed Temp: 85 °C - Print speed: 30 mm/s - Infill orientation: 45 °C - Cooling fan: 20%	<b>zy- normal</b>		<b>xy- parallel</b>	
				
<b>Infill</b>	50%	100%	50%	100%
<b>Impact strength (KJ/m²)</b>	32,28	34,21	22,84	33,69
<b>Impact Energy (J)</b>	1,29	1,37	0,91	1,35

THERMAL PROPERTIES	VALUE	STANDARD
Vicat Softening Temp.	103°C	ISO 306/A50
Heat Deflection Temp.	97°C	ISO 75-2/B

ELECTRICAL PROPERTIES	VALUE	STANDARD
Dielectric Constant _1 mm, 1 MHz	2.8 kV/mm	ASTM D150
Volume resistivity	1.0E+15 ohm*cm	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	230 – 240 °C
Suggested Print Speed	30 – 50 mm/s
Suggested Bed Temperature	85°C
Cooling fan	20-30%