

Technical Data Sheet

SMART ABS

IDENTIFICATION

Commercial name	SMART ABS
Raw Material	ABS Based Compound
Use	3D printing applications

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

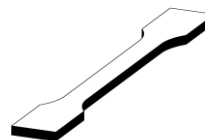
MECHANICAL PROPERTIES

TENSILE TEST – STANDARD ISO 527

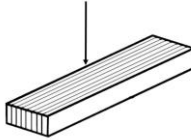
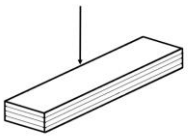
Test specimens printed on Ultimaker 2+ with the following setup:

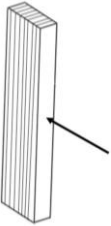
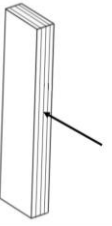
- Nozzle type: Standard Brass 0.4
- Nozzle Temperature: 230 °C
- Heat bed Temp: 85 °C
- Print speed: 30 mm/s
- Infill orientation: 45 °C
- Cooling fan: 20%

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%	zy- parallel		xy- normal	
				
Infill	50%	100%	50%	100%
Flexural strength (Mpa)	48,5	55,5	44,76	56,4
Flexural Modulus (Mpa)	1534	1697	1363	1622
Deformation (%)	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%	zy- normal		xy- parallel	
				
Infill	50%	100%	50%	100%
Impact strength (KJ/m²)	32,28	34,21	22,84	33,69
Impact Energy (J)	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%