# ABS TECHNICAL DATASHEET

Minerva3D
info@minerva3d.com

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# ABS Technical Datasheet [1]

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

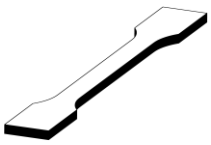
| PHYSICAL PROPERTIES | VALUE | STANDARD |
|---|---|---|
| Density | 1,03 g/cc | ISO 1183 |
| Ball Indentation Hardness | 74 MPa | ISO 2039-1 |

**MECHANICAL PROPERTIES**

TENSILE TEST – STANDARD ISO 527

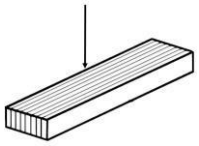
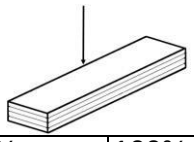
Test specimens printed on Ultimaker 2+ with the following setup:

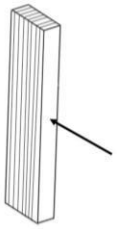
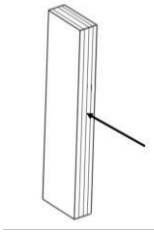
- Nozzle type: Standard Brass 0.4
- Nozzle Temperature: 230 ºC
- Heat bed Temp: 85 ºC
- Print speed: 30 mm/s
- Infill orientation: 45 ºC
- Cooling fan: 20%




| 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 |

[1] All the presented data comes from the manufacturer

| FLEXURAL TEST – STANDARD ISO 178 | | | | |
|---|---|---|---|---|
| Test specimens printed on Ultimaker 2+ with the following setup:<br>- Nozzle type: Standard Brass 0.4<br>- Nozzle Temperature: 230 ºC<br>- Heat bed Temp: 85 ºC<br>- Print speed: 30 mm/s<br>- Infill orientation: 45 ºC<br>- 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:<br>- Nozzle type: Standard Brass 0.4<br>- Nozzle Temperature: 230 ºC<br>- Heat bed Temp: 85 ºC<br>- Print speed: 30 mm/s<br>- Infill orientation: 45 ºC<br>- Cooling fan: 20% | **zy- normal**  | | **xy- parallel**  | |
| Infill | 50% | 100% | 50% | 100% |
| Impact strength (KJ/m$^2$) | 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. | 103ºC | ISO 306/A50 |
| Heat Deflection Temp. | 97ºC | 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% |