

ASA Conductive

MATERIAL PROPERTIES

Density	1.17 g/cm ³	ISO 1183
Mechanical		
CHARPY impact strength Unnotched*	15.7 kJ/m ²	ISO 179-1eU
CHARPY impact strength Notched*	1.5 kJ/m ²	ISO 179-1eA
Tensile elongation At yield (5 mm/min)*	2.2 %	ISO 527
Tensile elongation At break (5 mm/min)*	3 %	ISO 527
Tensile strength At yield (5 mm/min)*	48,7 MPa	ISO 527
Tensile strength At break (5 mm/min)*	46,1 MPa	ISO 527
Elastic modulus Tensile (1 mm/min)*	3570 MPa	ISO 527
Thermal properties		
VICAT - Softening point	102 °C	ISO 306
HDT - Heat Deflection Temperature, 0.45 MPa, injection moulding	101 °C	ISO 75
Electrical properties		
Electrical resistivity (surface, dry)	4E1 ohm	ASTM D 257

* at 23°C, injection moulding

GUIDELINE FOR PRINT SETTINGS*

Nozzle temperature - standard speed	240-270°C
Bed temperature	75-100°C
Active cooling fan	0-20%
Shell thickness**	0.4 - 2.7 mm
Layer height**	0.5 - 3.0 mm
Closed chamber	recommended for larger prints
Dry box	No
Ruby or hardened nozzle	Yes
Drying (if wet)	recommended***
Adhesive	not necessary (if you need increased adhesion or prevent warping: glue stick, Dimafix, 3DLac, Magigoo)

* settings are based on a 0.4mm nozzle

** depending on the geometrical complexity

*** at least 6h at 75°C using a hot dry air oven

Disclaimer

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DESCRIPTION

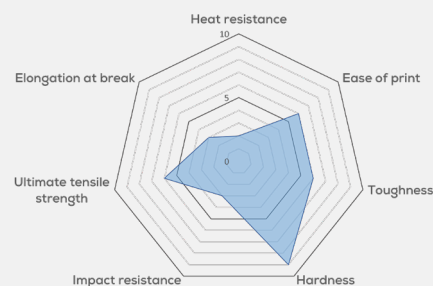
Filament Spectrum ASA Electrically Conductive is an advanced technical filament developed for professional applications where electrical conductivity and high resistance to external factors are essential. The filament is based on a durable ASA polymer enriched with carbon nanotubes (CNT), which provide very low surface resistivity – around 40 Ω. This makes the filament an excellent choice for applications requiring effective current conduction.

FEAUTURES

- Very low surface resistivity (~40 Ω·m)
- Electrical conductivity
- High rigidity and dimensional stability
- UV and weather resistance
- Matte finish to reduce visible layers

STORAGE AND SHELF LIFE

Filament should be stored in a dry room at room temperature. Recommended storage temperature is ca. 18-25°C (64.4 -77.0°F). Keep out of moisture, sunlight and direct heat. When stored properly, product has a shelf life of 24 months.



SUPPORT

If you have any questions or experience any issues, please do not hesitate to contact us at support@spectrumfilaments.com

ASA Conductive

VOLUME RESISTIVITY MEASUREMENTS

To verify the conductive properties, tests were conducted using a 3D-printed (100% infill, 0.2mm layer height, BambuLab P1S), specimen with dimensions $4 \times 4 \times 120$ mm, at 10 V and three different extrusion temperatures: 270°C, 280°C, and 290°C. The volume resistivity results were as follows:

- 270°C: 51 $\Omega \cdot m$
- 280°C: 45 $\Omega \cdot m$
- 290°C: 41 $\Omega \cdot m$

These measurements demonstrate that increasing the extrusion temperature positively influences the filament's conductivity. Higher temperatures improve the dispersion of carbon nanotubes within the model's structure, resulting in lower volume resistivity. For the user, this means that printing components requiring maximum conductivity is best achieved at higher extrusion temperatures (up to 290°C), provided that the printer's hardware supports such settings.

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