TECHNICAL DATA SHEET
DURAPRO PA12 CF

1. DESCRIPTION

DuraPro PA12 CF builds on the outstanding properties of DuraPro PA12 and takes them to a new level by reinforcing them with carbon fibres. This filament is ideal for industrial applications that require maximum strength, stiffness and dimensional stability. Carbon fibres are extremely lightweight, making DuraPro PA12 CF an ideal material for weight-critical applications in aerospace, motorsport and other sectors.

2. FEATURES

- Extremely high strength and stiffness
- High thermal resistance (VICAT A 142°C)
- Excellent dimensional stability, even at high temperatures
- Excellent chemical resistance
- Hardened nozzle min. 0.5 mm is recommended

3. PROPERTIES

TEST	METHOD	UNIT	VALUE
Density	ISO 1183	g/cm³	1.03
Melt Volume Rate (MVR) 235°C/5.0 kg	ISO 1133	cm³/10min	7
Water Absorption (Saturation 23°C)	ISO 62	%	1.6
Tensile Modulus	ISO 527-1	MPa	2820
Tensile Strength (Indentation Depth)	ISO 527-2	MPa	60,4
Tensile Elongation (Indentation Depth)	ISO 527-2	%	4
Nominal Elongation at Break	ISO 527-2	%	>35
Charpy Notched Impact Strength (+23°C)	ISO 179/1eA	kJ/m²	9
Charpy Notched Impact Strength (-30°C)	ISO 179/1eA	kJ/m²	5
Charpy Unnotched Impact Strength (+23°C)	ISO 179/1eU		No Break (NB)
Charpy Unnotched Impact Strength (-30°C)	ISO 179/1eU		No Break (NB)
Puncture Maximum Force (-30°C)	ISO 6603-2	J	62
Multiaxial Instrumented Impact Test, Peak Force -30°C	ISO 6603-2	N	5400
Heat Deflection Temperature (DTUL) 0.45 MPa, unannealed	ISO 75-2/B	°C	139
Heat Deflection Temperature (DTUL) 1.8 MPa, unannealed	ISO 75-2/A	°C	58
Vicat Softening Temperature	ISO 306/B50	°C	145
Mass Temperature	ISO 11357-3	°C	185
CLTE Flow	ISO 11359-2	cm/cm/°C	1.0E-4
Specific Surface Resistance	IEC 60093	ohms	1.0E+14
Specific Volume Resistivity	IEC 60093	ohms cm	1.0E+14
Dielectric Strength	IEC 60243-1	kV/mm	25
Comparative Tracking Index (CTI)	IEC 60112	V	500

*Temperature resistance tested at a minimum wall thickness of 4 mm.

PRINT SETTINGS

Nozzle	260-290 °C
Heatbed	110 °C
Adhesive	recommended
Speed	150 mm/s
Cooling	0-50%
Enclosed Space	yes
Hardened Nozzle	yes
Max. Volumetric Speed	8 mm^3/s

Recommended settings for printers with a 0.5 mm Nozzle. Max. 50% layerheight. Optimal print settings may vary between different printers and also depend on environmental factors.

4. CERTIFICATIONS & ADDITIONAL INFORMATION

RoHS compliant **REACH** compliant **FREE** of Silicone **FLAMERETARDANT** UL 94 HB

Certifications depend on colors in final product. More info in the additional information sheet.

5. STORAGE AND SHELF LIFE

Store in a dry room at room temperature (18-27°C / 65-80°F). Keep out of direct heat and sunlight.
When stored correctly, this material has a shelf life of 2 years.
Additional info in our regulatory, additional information and chemical resistance data sheets.