TECHNICAL DATA SHEET
DURAPRO PC-PBT CF

1. DESCRIPTION

PC-PBT with carbon fibre reinforcement raises the properties of the base material to a new level and makes it one of the most efficient thermoplastic materials for technical applications. Carbon fibres are extremely light, which makes PC-PBT with carbon fibre reinforcement a lightweight material with an excellent stiffness and strength-to-weight ratio. In addition, the material is more heat resistant and printing is possible without shrinking and warping.

2. FEATURES

- Carbon composite material for demanding performance applications
- Excellent mechanical properties
- Smooth surface with carbon look
- Thermal resistance (VICAT A 130 °C)
- Very good chemical resistance

3. PROPERTIES

TEST	METHOD	UNIT	VALUE
Melt Volume-Flow Rate (MVR)	ISO 1133	cm^3/10 min	16
Tensile Modulus	ISO 527-1,-2	MPa	4520
Yield Strength	ISO 527-1,-2	MPa	70,2
Yield Strain	ISO 527-1,-2	%	4
Nominal Elongation at Break	ISO 527-1,-2	%	> 35
Tensile Strength at Break	ISO 527-1,-2	MPa	60,8
Flexural Modulus	ISO 178	MPa	3350
Outer Fiber Strain at Maximum Force	ISO 178	%	5
3.5% - Flexural Stress	ISO 178	MPa	75
Flexural Strength	ISO 178	MPa	85
Charpy Impact Strength	ISO 179/1eU	kJ/m^2	N
Charpy Notched Impact Strength	ISO 179/1eA	kJ/m^2	65
Puncture Performance - Maximum Force	ISO 6603-2	N	4400
Puncture Energy	ISO 6603-2	J	47
Izod Impact Strength	ISO 180/U	kJ/m^2	N
Izod Notched Impact Strength	ISO 180/A	kJ/m^2	55
Ball Indentation Hardness	ISO 2039-1	N/mm^2	112
Heat Deflection Temperature 1.8 Mpa	ISO 75-1,-2	°C	89
Heat Deflection Temperature 0.45 Mpa	ISO 75-1,-2	°C	115
Vicat Softening Temperature	ISO 306	°C	130
Linear Coefficient of Thermal Expansion, parallel	ISO 11359-1,-2	10^{-4}/K	0.9
Linear Coefficient of Thermal Expansion, perpendicular	ISO 11359-1,-2	10^{-4}/K	0.9
Flammability UL 94 (1.5 mm)	UL 94	Class	HB (Bayer)
Oxygen Index	ISO 4589-2	%	21
Thermal Conductivity, perpendicular	ISO 8302	W/(m·K)	0.2
Glow Wire Flammability Index (GWFI)	IEC 60695-2-12	°C	630
Relative Permittivity 100Hz	IEC 60250	-	3.2

TEST	METHOD	UNIT	VALUE
Relative Permittivity 1MHz	IEC 60250	-	3.0
Dielectric Loss Factor 100Hz	IEC 60250	10^{-4}	7
Dielectric Loss Factor 1MHz	IEC 60250	10^{-4}	45
Specific Volume Resistivity	IEC 62631-3-1	Ohm·m	>1E15
Specific Volume Resistivity	IEC 62631-3-2	Ohm	>1E17
Dielectric Strength	IEC 60243-1	kV/mm	30
Comparative Tracking Index (CTI)	IEC 60112	Stage	600
Comparative Tracking Index (CTI) M	IEC 60112	Stage	125
Water Absorption (Saturation Value)	ISO 62	%	0.5
Water Absorption (Equilibrium Value)	ISO 62	%	0.2
Density	ISO 1183-1	kg/m^3	1200

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

PRINT SETTINGS

Nozzle	265-295°C
Heatbed	110 °C
Adhesive	recommended
Speed	max. 250 mm/s
Cooling	0-30 %
Enclosed Space	yes
Hardened Nozzle	yes
max. Volumetric Flow Rate	18 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 **CHEMICAL** resistent

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.