

Electrafil® PC 1705 3DP

 Techmer Polymer Modifiers - *Polycarbonate*
General Information
Product Description

Electrafil® PC 1705 3DP is a specially formulated, carbon fiber filled, and compounded thermoplastic and has been optimized for maximum printability in additive manufacturing. This product provides extremely high X- and Z- direction strength and moderate temperature resistance.

General

Material Status	• Commercial: Active
Availability	• North America
Filler / Reinforcement	• Carbon Fiber
Uses	• Additive Manufacturing (3D Printing)
Processing Method	• 3D Printing

Properties ¹

Physical	Nominal Value	Unit	Test Method
Density / Specific Gravity			ASTM D792
-- 2	1.21		
-- 3	1.21		
-- 4	1.29		
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus			ASTM D638
-- 2	140000	psi	
-- 3	450000	psi	
-- 4	2.00E+6	psi	
Tensile Strength			ASTM D638
Yield ²	16000	psi	
Yield ³	8400	psi	
Yield ⁴	20000	psi	
Tensile Elongation			ASTM D638
Break ²	1.9	%	
Break ³	1.8	%	
Break ⁴	1.5	%	
Flexural Modulus			ASTM D790
-- 2	1.44E+6	psi	
-- 3	490000	psi	
-- 4	1.80E+6	psi	
Flexural Strength			ASTM D790
-- 2	24300	psi	
-- 3	12200	psi	
-- 4	29000	psi	



Compressive Modulus ⁴	1.74E+6 psi	ASTM D695
Compressive Strength ⁴	22600 psi	ASTM D695
Impact	Nominal Value Unit	Test Method
Notched Izod Impact ⁴	1.2 ft·lb/in	ASTM D256
Thermal	Nominal Value Unit	Test Method
Deflection Temperature Under Load ⁴ (66 psi, Unannealed)	305 °F	ASTM D648
CLTE - Flow		ASTM D696
-- ²	7.8 in/in/°F	
-- ³	54 in/in/°F	
Electrical	Nominal Value Unit	Test Method
Surface Resistivity ⁴	< 1.0E+4 ohms	ASTM D257
Additional Information	Nominal Value Unit	Test Method
Recommended Print Bed	Aluminum bed with cement glue, heated aluminum bed, PC sheet, or PEI sheet	
Recommended Print Bed Temperature	194 to 248 °F	

Processing Information

Extrusion	Nominal Value Unit
Drying Temperature	260 °F
Drying Time	4.0 to 6.0 hr
Cylinder Zone 1 Temp.	500 to 520 °F
Cylinder Zone 2 Temp.	550 to 580 °F
Cylinder Zone 3 Temp.	550 to 580 °F
Cylinder Zone 4 Temp.	560 to 620 °F
Melt Temperature	550 to 630 °F
Die Temperature	520 to 630 °F

Extrusion Notes

If material is to remain in dryer for more than 6 hours in dried state, reduce dryer temperature to 140°F to prevent degradation of material.

Notes

- ¹ Typical properties: these are not to be construed as specifications.
- ² Additive Manufactured - X Orientation
- ³ Additive Manufactured - Z Orientation
- ⁴ Injection Molded

