



VERTEC 5019 is 40% carbon fiber reinforced PEEK (polyetheretherketone). This high strength bearing material demonstrates excellent compressive strength and stiffness. The addition of carbon fibers lowers the expansion rate dramatically and increases the thermal conductivity over 4 times higher than that of virgin PEEK (**PEEK 5000**) enabling it to dissipate heat faster from the bearing surface. The right combination of these favorable properties renders this material optimum wear resistance and load carrying capability.

<i>Physical Properties</i>	<i>ASTM Method</i>	<i>Typical Values</i>
Specific Gravity	D792	1.44 gr/cm ³
Water Absorption (24hrs. @73.4°F)	D570	0.1 %
Color	N/A	Black

<i>Mechanical Properties</i>		
Tensile Strength	D1708	19,000 psi
Tensile Elongation	D1708	1 %
Flexural Strength	D790	26,000 psi
Flexural Modulus	D790	1,400,000 psi
Compressive Strength	D695	28,000 psi
Compressive Modulus	D695	1,000,000 psi
Impact Strength (Izod, notched)	D256	2 ft-lb/in
Hardness	Shore D	90

<i>Tribological Properties</i>		
Coefficient of Friction		
Static	D3702	0.4
Dynamic	D3702	0.3
Wear Rate (PV: 2,000 psi-fpm)	D3702	0.3 μin/min

<i>Thermal Properties</i>		
Thermal Conductivity		1.2 W/m.K
Coefficient of Linear Thermal Expansion (78 to 200 °F)	D696	9 10 ⁻⁶ /°F
Heat Deflection Temperature (@264 psi)	D648	550 °F
Glass Transition Temperature (T _g)	D3418	289 °F
Continuous Service Temperature (Max @ no load)		500 °F
Melting Point		644 °F

<i>Electrical Properties</i>		
Volume Resistivity	D257	1 10 ⁴ ohm-cm
Dielectric Strength (1/8" thick)	D149	25 V/mil
Dielectric Constant	D150	50Hz, 200 °C