

TECHNICAL DATA

PAI Torlon

PAI (Torlon®) is the strongest and toughest polymer fastener available. Torlon fasteners are as strong as glass-fiber reinforced PEEK and are also usable at higher temperatures to 527°F (275°C). Torlon screws also have outstanding resistance to wear, creep and most chemicals. Glass fiber-reinforced grade Torlon improves strength, modulus and creep resistance. In some applications Torlon fasteners can replace metals due to these outstanding mechanical properties.

Properties & Data

Property	ASTM / UL Test	Torlon® PAI 4203
PHYSICAL		
Density (lb/in ³) (g/cm ³)	D792	0.051 (1.41)
Water Absorption, 24 hrs (%)	D570	0.33
MECHANICAL		
Strength/Weight Ratio	Tensile Strength /	15600
Tensile Strength (psi)	D638	22,000
Tensile Modulus (psi)	D638	650,000
Tensile Elongation at Break (%)	D638	7.6
Flexural Strength (psi)	D790	41,000
Flexural Modulus (psi)	D790	1,140,000
Hardness, Rockwell, R/M Scale	D785	M120
IZOD Impact Notched (ft-lb/in)	D256	2.7
THERMAL		
Coefficient of Linear Thermal Expansion (x 10 ⁻⁵ in./in./°F)	D696	3.1
Heat Deflection Temp (°F / °C) at 264 psi	D648	532 / 278
Melting Temp (°F / °C)	D3418	none (degrades ~500 °C)
Max Operating Temp (°F / °C)	-	525/ 275
Thermal Conductivity (BTU-in/ft ² -hr-°F)	C177	1.8
ELECTRICAL		
Dielectric Strength (V/mil) short time, 1/8" thick	D149	580
Dielectric Constant at 1 MHz	D150	3.9
Dissipation Factor at 1 MHz	D150	0.026
Volume Resistivity (ohm-cm) at 50% RH	D257	> 10 ¹⁶

Key Benefits

- Unparalleled high strength polymer
- Superior toughness from cryogenic to extreme temperatures of 525°F (275°C)
- Outstanding wear resistance
- Excellent flame resistance
- Metal-like coefficient of linear thermal expansion
- Resistant to most chemicals

TORLON - Tensile Data

@ Room Temperature

Material	Ultimate Tensile (psi)	Yield Strength (psi)
Torlon Unfilled	22,000	-