



Technical Datasheet ApexPAI Impact

Product Description

ApexPAI Impact is a rigid, unreinforced thermoplastic which performs well in high load and high impact environments. It has the highest strength and stiffness of any thermoplastic up to 260°C. The material resists creep and wear even at underhood temperatures, has good fracture toughness, and is able to absorb NVH and impact forces much better than metallic components. It has excellent fatigue strength and is a thermal insulator.

Typical Applications

- Thermal isolation
- Fatigue resistant drivetrain mountings
- Transmission shift/linkage bushings
- Transmission shift fork pads
- Transmission check balls
- Thrust washers


Mechanical Data


	Imperial	Metric	Test Method
Ultimate Tensile Strength	20000 psi	138 MPa	ASTM D638
Tensile Modulus	600 ksi	4.14 GPa	ASTM D638
Elongation at Break	15 %	15 %	ASTM D638
Compressive Strength	24000 psi	165 MPa	ASTM D695
Compressive Modulus	478 ksi	3.30 GPa	ASTM D695
Flexural Strength (Yield)	24000 psi	165 MPa	ASTM D790
Flexural Modulus	600 ksi	4.14 GPa	ASTM D790
Hardness, Rockwell M	120	120	ASTM D785
Hardness, Shore D	90	90	ASTM D2240
Izod Impact (notched)	2.0 ft-lb/in	1.05 J/cm	ASTM D256 Type A
Density	0.051 lb/in ³	1.41 g/cm ³	ASTM D792

Thermal Data

Glass Transition Temperature	525 °F	274 °C	ASTM D3418
Heat Deflection Temperature	536 °F	280 °C	ASTM D648
Melting point	N/A	N/A	
Coefficient of Thermal Expansion	17.0 $\mu\text{in}/\text{in}\cdot^{\circ}\text{F}$	31.0 $\mu\text{m}/\text{m}\cdot^{\circ}\text{C}$	ASTM D696
Thermal Conductivity	1.8 BTU-in/hr-ft ² ·°F	0.26 W/(mK)	ASTM C177

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