Poly-Texx 350GF

Low-cost plastic utilized in wear and bearing applications
that excels in highly abrasive environments

General Information

Chemical Designation:

UHMW-PE (Ultra High Molecular Weight Polyethylene)

Fillers:

Glass

Color:

Blue, Black, or Orange

Specific Gravity:

0.933

Poly-Texx 350GF is a specially formulated grade of glass filled UHMW. 350GF is known for its exceptional abrasive resistance, toughness, and low cost. It can be ordered in almost any color but is commonly specified to be blue in sheet and orange in rod.

Typical applications include slide plates, funnels, augers, and flanged bearings for high wear industrial and manufacturing applications. Custom and standard profiles exist for conveying environments. 350GF is unstable due to its base resin, but Poly-Tech's experience machining the material allows it to hold tolerances as tight as +/-.001. The glass can be abrasive, so care should be taken when machining to ensure tool wear doesn't create issues during machining.

Technical Information

Specification	Test	Value	Units
Density, 73°F	D792	.933	gm/cm3
Tensile Strength @ Yield, 73°F	D638	3,100	psi
Tensile Modulus of Elasticity, 73°F	D638		psi
Tensile Elongation (at break), 73°F	D638		%
Flexural Strength, 73°F	D790		psi
Flexural Modulus of Elasticity	D790		psi
Shear Strength, 73°F	D732		psi
Compressive Strength – Ultimate		1,000	psi
Compressive Strength at 2% Deformation	D695	1,200	psi
Compressive Strength at 10% Deformation	D695	1,500	psi
Deformation Under Load			%
Compressive Modulus of Elasticity, 73°F	D695		
Compressive Strength ⊥ to Laminate (Modulus)			psi
Compressive Strength ⊥ to Laminate (Yield)		1,000	psi
Compressive Strength ⊥ to Laminate (Ultimate)		1,000	psi
Hardness, Durometer (Shore "D" scale)	D2240	80D	
Hardness, Rockwell (Scale as noted)	D785		Rockwell M
Izod Impact, Notched @ 73°F	D256 Type A	125	ft.lbs/in. of notch
Coefficient of Friction (Dry vs Steel) Static	PTM 55007	0.15-0.20	
Coefficient of Friction (Dry vs Steel) Dynamic	PTM 55007	0.1-0.20	
Maximum Static Bearing Load (P)	PTM 55007	1,000	psi
Maximum Unlubricated No Load Bearing Velocity (V)	PTM 55007	20	ft/minute
Maximum Limiting PV (Unlubricated)	PTM 55007	15,00	psi x ft/min.
Wear Factor "K" x 10-10	PTM 55010		Cubic in.-min/ft.lbs.hr
Sand Wheel Wear/Abrasion Test		110	UHMW=100
Minimum Mating Surface Hardness		32	Rockwell (Brinnell)
Coefficient of Linear Thermal Expansion	E-831 (TMA)	9.1	in/in/°F x 10-5
Coefficient of Thermal Expansion // to Laminates	E-831 (TMA)	9.1	in/in/°F x 10-5
Coefficient of Thermal Expansion l to Laminates	E-831 (TMA)	9.1	in/in/°F x 10-5
Softening Point		190	°F
Heat Deflection Temperature 264 psi	D648		°F
Embrittlement Temperature		Cryogenic	°F Min.
Continuous Service Temperature in Air		180	°F Max.
Short Term Service Temperature		212	°F Max.
Tg-Glass Transition (Amorphous)	D3418		°F
Melting Point (Crystalline) Peak	D3418	267	°F
Thermal Conductivity	F433		BTU-in/(hr/ft2°F)
Dielectric Strength Short Term	D149	900	KV/mm
Volume Resistivity	D257	>1015	ohm/cm
Surface Resistivity	D257		ohm/cm
Dielectric Constant, 106 Hz	D150		
Dissipation Factor, 106 Hz	D150		
Flammability @ 3.1mm(1/8 in.) UL94	UL94	V-2	
Arc Resistance			seconds
Water Absorption, Immersion 24 Hours	D570 (2)	Nil	%
Water Absorption, Immersion Saturation	D570 (2)	Nil	%
Machinability Rating		5	1=easy, 10=difficult
Rod Diameter Availability (Call for Availability)	1.0	6.0	inches
Sheet Thickness Availability (Call for Availability)	.250	6.0	inches
Characteristics / Attributes	Superior Abrasion Resistance / Self Lubricating / High impact and Wear resistance		

Thank you for your interest in our materials. All statements, technical information and recommendations presented are in good faith, based upon tests believed to be reliable and practical field experience. Poly-Tech is not responsible for its accuracy or completeness. It is our recommendation and the customer's responsibility to determine the suitability of any material for any given application.