

Extruded Nylon Tecamid® GF30

Nylon was the first engineering resin. It has been used in applications ranging from electronic, marine, and automotive industries to fibers used to make carpet. Nylon has outstanding wear resistance and low frictional properties. It has very good temperature, chemical, and impact properties. However, nylon's one weakness is a propensity to absorb moisture and thus have poor dimensional stability.

Extruded nylon, available in a variety of grades, offers a combination of good mechanical properties, excellent bearing and wear characteristics. Its fatigue resistance, noise damping ability, corrosion resistance, and lightweight make extruded nylon ideal for metal replacement applications, such as bearings, gears, sheaves, and sprockets. At one-eighth the weight of bronze, extruded nylon is easier to handle and maintain than metals such as iron, aluminum, brass, and bronze, which it typically replaces in industrial wear applications.

Other materials that extruded nylon commonly replaces because of its superior performance are laminated phenolic, elastomers, and wood. Extruded nylon has excellent wear and abrasion resistance, resulting in extended component life and lower maintenance cost. Its formulations are readily available in rod, plate, and tube.

TECAMID® GF30

This is a 30% glass-fiber reinforced nylon 6/6 material whose important properties include a high tensile and flexural strength, stiffness, excellent heat deflection temperature, and superior abrasion and wear resistance. While all extruded nylon materials have high mechanical strength and superior resistance to wear and organic chemicals, TECAMID® GF30 has more than double the strength and stiffness of unreinforced extruded nylons and a heat deflection temperature which approaches its melting point.

Properties	ASTM Test	Units	Tecamid® GF30
Physical			
Density	D792	lbs/in ³	-
Specific Gravity	D792	g/cc	1.34
Water Absorption, @ 24 hours	D570	%	0.1
Water Absorption, @ Saturation			0.3
Mechanical			
Tensile Strength @ Yield	D638	psi	13,000
Tensile Modulus	D639	psi	797,000
Elongation @ Break	D638	%	14
Flexural Strength	D790	psi	19,575
Flexural Modulus	D790	psi	681,000
Compressive Strength	D695	psi	-
@ 1% Strain			3,625
@ 2% Strain			6,670
Compressive Modulus	D695	psi	594,000
Izod Impact Strength	D256	ft-lbs/in	1.8
Rockwell Hardness	D785	M or R Scale	M-88
Shore Hardness	D785	M Scale	-
Wear Factor Against Steel, 40 psi, 50 fpm	D3702	-	-
Static Coefficient of Friction			-
Dynamic Coefficient of Friction, 40 psi, 50 fpm			-

Properties	ASTM Test	Units	Tecamid® GF30
Thermal			
Heat Deflection Temperature @ 66 psi @ 264 psi	D648	°F	- -
Coefficient of Linear Thermal Expansion	D696	in/in/°F	2.70E-05
Maximum Servicing Temperature Intermittent Long Term	- UL746B	°F °F	338 230
Specific Heat	-	BTU/lb-°F	-
Thermal Conductivity	-	-	-
Vicat Softening Point	-	°F	-
Melting Point	D2133	°F	489
Flammability	UL 94	(mm)	-
Electrical			
Surface Resistivity	D257	ohm/square	-
Volume Resistivity		ohm-cm	-
Dielectric Strength	D149	V/mil	-
Dielectric Constant			
@ 60 Hz, 70° F, 50% RH	D150	-	-
@ 1 MHz		-	-
@ 20 GHz		-	-
@ 30 GHz		-	-
Dissipation Factor @ 60 Hz, 70° F	D150		-

NOTE: The information contained herein are typical values intended for reference and comparison purposes only. They should NOT be used as a basis for design specifications or quality control. Contact us for manufacturers' complete material property datasheets. All values at 73°F (23°C) unless otherwise noted.