

Stanyl® TW271B3

(PA46+PTFE)—CF15

15% Carbon Fiber Reinforced, Heat Stabilized, Wear and Friction Modified

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Stanyl® TW271B3 is a friction-modified high heat polyamide that offers excellent creep resistance, strength, stiffness and fatigue resistance, not only at ambient temperatures but especially at high temperatures, while at the same time providing cycle-time advantages and excellent flow. TW271B3 has an excellent track-record in gear applications.

PROPERTIES	TYPICAL DATA	UNIT	TEST METHOD
RHEOLOGICAL PROPERTIES			
	DRY / COND		
Molding shrinkage (parallel)	0.2 / *	%	ISO 294-4
Molding shrinkage (normal)	0.8 / *	%	ISO 294-4
MECHANICAL PROPERTIES			
	DRY / COND		
Tensile modulus	13500 / 6700	MPa	ISO 527-1/-2
Tensile modulus (120°C)	6300 / —	MPa	ISO 527-1/-2
Tensile modulus (160°C)	5700	MPa	ISO 527-1/-2
Tensile modulus (180°C)	5400	MPa	ISO 527-1/-2
Tensile modulus (200°C)	5100	MPa	ISO 527-1/-2
Stress at break	195 / 120	MPa	ISO 527-1/-2
Stress at break (120°C)	108 / —	MPa	ISO 527-1/-2
Stress at break (160°C)	92	MPa	ISO 527-1/-2
Stress at break (180°C)	84	MPa	ISO 527-1/-2
Stress at break (200°C)	76	MPa	ISO 527-1/-2
Strain at break	2.1 / 5	%	ISO 527-1/-2
Strain at break (120°C)	5 / —	%	ISO 527-1/-2
Strain at break (160°C)	5	%	ISO 527-1/-2
Strain at break (180°C)	5	%	ISO 527-1/-2
Strain at break (200°C)	5	%	ISO 527-1/-2
Flexural modulus	12000 / 5800	MPa	ISO 178

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PROPERTIES	TYPICAL DATA	UNIT	TEST METHOD
Flexural modulus (120°C)	6300	MPa	ISO 178
Flexural modulus (160°C)	5900	MPa	ISO 178
Flexural strength	280 / 150	MPa	ISO 178
Flexural strength (120°C)	150	MPa	ISO 178
Flexural strength (160°C)	120	MPa	ISO 178
Charpy impact strength (+23°C)	50 / 57	kJ/m²	ISO 179/1eU
Charpy impact strength (-30°C)	45 / 45	kJ/m²	ISO 179/1eU
Charpy notched impact strength (+23°C)	6 / 12	kJ/m²	ISO 179/1eA
Charpy notched impact strength (-30°C)	5 / 4.5	kJ/m²	ISO 179/1eA
Izod notched impact strength (+23°C)	6 / 12	kJ/m²	ISO 180/1A

THERMAL PROPERTIES	DRY / COND		
Melting temperature (10°C/min)	295 / *	°C	ISO 11357-1/-3
Temp. of deflection under load (1.80 MPa)	290 / *	°C	ISO 75-1/-2
Coeff. of linear therm. expansion (parallel)	0.09 / *	E-4/°C	ISO 11359-1/-2
Coeff. of linear therm. expansion (normal)	0.86 / *	E-4/°C	ISO 11359-1/-2
Coeff. of linear therm. expansion (parallel)	0.25	E-4/°C	ASTM D696
Coeff. of linear therm. expansion (normal)	0.5	E-4/°C	ASTM D696
Burning Behav. at 3.0 mm nom. thickn.	HB / *	class	IEC 60695-11-10
Thickness tested	3 / *	mm	IEC 60695-11-10
UL recognition	Yes / *	—	—

ELECTRICAL PROPERTIES	DRY / COND		
Volume resistivity	100000 / —	Ohm*m	IEC 62631-3-1

OTHER PROPERTIES	DRY / COND		
Humidity absorption	2.6 / *	%	Sim. to ISO 62
Density	1320 / —	kg/m³	ISO 1183

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