

# Stanyl® TW271B3 (PA46+PTFE)-CF15

15% Carbon 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
<b>Rheological properties</b>	<b>dry / cond</b>		
Molding shrinkage (parallel)	0.2 / *	%	ISO 294-4
Molding shrinkage (normal)	0.8 / *	%	ISO 294-4
<b>Mechanical properties</b>	<b>dry / cond</b>		
Tensile modulus	12500 / 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	185 / 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 / 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	11000 / 5800	MPa	ISO 178
Charpy impact strength (+23°C)	50 / -	kJ/m <sup>2</sup>	ISO 179/1eU

Properties	Typical Data	Unit	Test Method
Charpy impact strength (-30°C)	45 / -	kJ/m <sup>2</sup>	ISO 179/1eU
Charpy notched impact strength (+23°C)	6 / -	kJ/m <sup>2</sup>	ISO 179/1eA
Charpy notched impact strength (-30°C)	5.5 / -	kJ/m <sup>2</sup>	ISO 179/1eA
Izod notched impact strength (+23°C)	6 / 12	kJ/m <sup>2</sup>	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)	0.25 / *	E-4/°C	ISO 11359-1/-2
Coeff. of linear therm. expansion (normal)	0.5 / *	E-4/°C	ISO 11359-1/-2
Burning Behav. at 1.5 mm nom. thickn.	HB / *	class	IEC 60695-11-10
Thickness tested	0.75 / *	mm	IEC 60695-11-10
UL recognition	Yes / *	-	-
Burning Behav. at thickness h	HB / *	class	IEC 60695-11-10
Thickness tested	3 / *	mm	IEC 60695-11-10
UL recognition	Yes / *	-	-

**Electrical properties**

dry / cond

Volume resistivity	10 / -	Ohm*m	IEC 60093
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**Other properties**

dry / cond

Humidity absorption	2.6 / *	%	Sim. to ISO 62
Density	1320 / -	kg/m <sup>3</sup>	ISO 1183