

Materials for Molded Assembly Hardware

Property	ASTM Method	Test Condition	Units	Molded 6/6 Nylon	Heat Stabilized Nylon	UV Black Nylon
Tensile Strength	D638	+73°F; 50% RH	kpsi	11.2	11.2	9.0
Elongation at Break	D638	+73°F; 50% RH	%	≥300	≥300	200
Yield Strength	D638	+73°F; 50% RH	kpsi	8.5	8.5	9.0
Shear Strength	D732	Dry As Molded (DAM)	kpsi	9.6	9.6	10.5
Deformation Under Load	D621	2,000 psi +122°F; DAM	%	1.4	1.4	1.2
IZOD Impact	D256	+73°F; 50% RH	ft lb/in	2.1	2.1	2.0
Tensile Impact Strength	D1822	+73°F; Long Specimen; DAM	ft lb/in²	240	240	N.R.
Melting Point	D789	Fisher-Johns	°F	491	491	491
Thermal Linear Expansion	D696	DAM	in/in/°F	4 x 10 ⁻⁵	4 x 10 ⁻⁵	N.R.
Thermal Conductivity	—	DAM Conche-Fitch	BTU - in/h . ft² . °F	1.7	1.7	1.7
Brittleness Temperature	D746	50% RH	°F	-85	-85	-62
Oxygen Index	D2863	DAM 50% RH	%O ₂	28 31	28 31	25 31
UL Flammability	UL 94	DAM 50% RH	— —	V-2 V-2	V-2 V-2	V-2 V-2

- Material data as provided by our suppliers.
- Tests conducted on 1/4" specimens.
- N.R. = Not Reported

About Nylon...

Nylons possess an outstanding balance of properties combining strength, moderate stiffness, high service temperature and a high level of toughness. Nylon is particularly resistant to repeated impact, has a low co-efficient of friction and excellent abrasion resistance.

Nylon is resistant to fuels, lubricants and most chemicals, but is attacked by phenols, strong acids and oxidizing agents. Contact your Ty-Fast® Customer Service Representative or your Ty-Fast® Distributor for chemical data relative to your application.

Nylon is inherently susceptible to environmental conditions. Ty-Fast® Cable Ties are moisturized to optimum performance levels at machine-side and should be stored in cool dry areas out of direct sunlight. Cable Ties are packaged in plastic bags to contain moisture and should remain sealed until ready for use.

NBS Smoke Generation for 6/6 Nylon

Sample Thickness	UL Flammability	Energy Source	Specific Optical Density	
			at Maximum Smoke Accumulation	at 2 Minutes
1/8"	94 V-2	Radiant (2.5 watts/sq cm)	13	0
1/8"	94 V-2	Radiant Plus Flaming Gas Jets	26	1

- Results as provided by National Bureau of Standards (NBS). Results may not be directly correlated with larger fires, such as burning buildings. Materials should be tested to your application.

Temperature Index for Molded Nylons

Material	Minimum Thickness (in)	Temperature Index		
		Electrical (°C)	Mechanical w/o Impact (°C)	Hot Wire Ignition (sec)
6/6 Nylon	.058	125	85	15.0
UV Black Nylon	.120	125	85	35.0
Heat Stabilized Nylon	.120	130	110	20.0

- Temperature Index is the temperature at which the specific property will decrease to one-half its original value after 60,000 hours exposure at that temperature.