

Material Selection Criteria

				Impact Modified Weather Resistant Nylon 6.6	Heat Stabilized Nylon 6.6	Heat Stabilized Nylon 6.6	Heat Stabilized Weather Resistant Nylon 6.6	Flame Retardant Nylon 6.6	Flame Retardant Nylon 6.6	Weather Resistant Nylon 12	Polypropylene	Weather Resistant Polypropylene	TEFZEL®	HALAR®				Metal Detectable Nylon	Metal Detectable Polypropylene	DT Weather Resistant Acetal	ERT Flame Retardant TPU
Material	Test Method	Nylon 6.6	Weather Resistant Nylon 6.6	Black	Black	Black	Natural	Black	Natural Ivory	Black	Green	Black	Aqua Blue	Maroon	Translucent Brown	Lt. Blue	Dark Blue	Black	Black		
Color	—	Natural (other colors available)	Black	Black	Black	Natural	Black	Black	Natural Ivory	Black	Green	Black	Aqua Blue	Maroon	Translucent Brown	Lt. Blue	Dark Blue	Black	Black		
Part Number Suffix (Material Designation)	—	No Suffix	0	0	30	39	300	60	69	120	109	100	76	702Y	71	86	186	N/A	20		
Mechanical Properties	Tensile @ Yield @ 73°F (psi)	ISO 527	12,000	12,000	9,700	12,000	12,000	12,000	11,000	11,000	6,700	4,100	4,100	7,500	7,000	15,200	—	—	6,500	4,300	
	Water Absorption (24 Hours)	ASTM D570	1.2%	1.2%	1.2%	1.2%	1.2%	1.2%	1.1%	1.1%	0.3%	0.1%	0.1%	<0.03%	<0.05%	0.5%	1.2%	0.1%	<0.45%	0.25%	
	Radiation Resistance (Rads)	—	1 x 10 <sup>5</sup>	1 x 10 <sup>5</sup>	1 x 10 <sup>5</sup>	1 x 10 <sup>5</sup>	1 x 10 <sup>5</sup>	1 x 10 <sup>5</sup>	1 x 10 <sup>5</sup>	1 x 10 <sup>5</sup>	3.5 x 10 <sup>6</sup>	1 x 10 <sup>6</sup>	1 x 10 <sup>6</sup>	2 x 10 <sup>8</sup>	2 x 10 <sup>8</sup>	1 x 10 <sup>9</sup>	—	1 x 10 <sup>9</sup>	6 x 10 <sup>5</sup>	—	
	Weathering Life Expectancy (Years)/UV Resistance	—	1 – 2	7 – 9	7 – 9	4 – 5	1 – 2	7 – 9	1 – 2	1 – 2	12 – 15	1	7 – 9	>15	>15	—	—	1	>20	7 – 9	
	Impact Resistance	—	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	
Chemical Resistance	Salts	—	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	
	Hydrocarbons (Oil, Lubricants)	—	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	
	Chlorinated Hydrocarbons	—	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	
	Acids	—	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	
	Bases	—	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	
	Acid Rain	—	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	
Thermal Properties	Continuous Use Temperature Range	UL 746B	-76°F – 185°F -60°C – 85°C	-76°F – 185°F -60°C – 85°C	-76°F – 185°F -60°C – 85°C	-76°F – 239°F -60°C – 115°C	-76°F – 239°F -60°C – 115°C	-76°F – 239°F -60°C – 115°C	-76°F – 212°F -60°C – 100°C	-76°F – 212°F -60°C – 100°C	-76°F – 194°F -60°C – 90°C	-76°F – 239°F -60°C – 115°C	-76°F – 239°F -60°C – 115°C	-76°F – 338°F -60°C – 170°C	-76°F – 257°F -60°C – 125°C	-76°F – 500°F -60°C – 260°C (Note 2)	-76°F – 185°F -60°C – 85°C	-76°F – 239°F -60°C – 115°C	76°F – 185°F -60°C – 85°C	-40°F – 122°F -40°C – 50°C	
	Minimum Installation Temperature	UL 62275	-4°F or +32°F -20°C or 0°C (Note 1)	-4°F or +32°F -20°C or 0°C (Note 1)	-4°F or +32°F -20°C or 0°C (Note 1)	-4°F or +32°F -20°C or 0°C (Note 1)	-4°F or +32°F -20°C or 0°C (Note 1)	-4°F or +32°F -20°C or 0°C (Note 1)	-4°F or +32°F -20°C or 0°C (Note 1)	-4°F or +32°F -20°C or 0°C (Note 1)	-4°F or +32°F -20°C or 0°C (Note 1)	-4°F or +32°F -20°C or 0°C (Note 1)	-4°F or +32°F -20°C or 0°C (Note 1)	-4°F or +32°F -20°C or 0°C (Note 1)	-4°F or +32°F -20°C or 0°C (Note 1)	-4°F or +32°F -20°C or 0°C (Note 1)	-4°F or +32°F -20°C or 0°C (Note 1)	-4°F or +32°F -20°C or 0°C (Note 1)	-4°F or +32°F -20°C or 0°C (Note 1)	-4°F or +32°F -20°C or 0°C (Note 1)	
	Flammability Rating	UL 94	V-2	V-2	HB	V-2	V-2	V-2	V-0	V-0	HB	HB	HB	V-0	V-0	V-0	HB	HB	HB	V-0	
	Low Smoke	ASTM E662	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	—	—	—	—	—	PASS	—	—	PASS	—	
	Oxygen Index	BS ISO 4589	28	28	—	28	28	28	34	34	—	—	—	30	52	35	—	—	—	26	
	Halogen-Free	IEC 60754-2	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes	
	Burning Fume Toxicity	BSS-7239	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	—	—	—	—	—	—	—	—	—	—	
	Heat Deflection Temperature @ 1.8 Mpa	ASTM D648 ISO 75 -1/-2	158°F 70°C	158°F 70°C	145°F 63°C	158°F 70°C	158°F 70°C	158°F 70°C	154°F 68°C	154°F 68°C	122°F 50°C	122°F 50°C	122°F 50°C	—	149°F 65°C	313°F 156°C	—	—	147°F 64°C	—	
Relative Price	—	Low	Low	Low	Low	Low	Med	Med	Med	Med	Med	Med	High	High	High	Low	Med	Med	High		

Material Availability	Product Family			Cross Sections																
	Pan-Ty® Cable Ties PLT		3	SM, M, I, S	LH, H, EH	3	3	3	3	3	3	3	3	3	3	3	3	3		
	Super-Grip® Cable Ties SG		3	M, I, S, LH	H	3														
	Dome-Top® Barb Ty Cable TiesBT		3	M, I, S	LH	3	3	3		3										
	Dura-Ty™ Cable Ties DT																		3	
	Contour-Ty® Cable Ties CBR		3	M, I, S, HS, LH		3	3			3										
	Hyper-V™ Cable Ties HV				LH															
	Sta-Strap® Cable Ties SST		3	M, I, S, H		3														
	Elastomeric Cable Ties ERT																			3

Recommendation Legend				
Highest	High	Acceptable	Low	Lowest
☐	☐	☐	☐	☐

Check mark indicates material availability in that product family for all cross sections.

Cross Sections: SM = Subminiature, M = Miniature, I = Intermediate, S = Standard, HS = Heavy-Standard, LH = Light-Heavy, H = Heavy, EH = Extra-Heavy

**Note 1:** Check UL file for specific part number rating

**Note 2:** Based upon UL RTI for electrical properties

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\*HALAR is a registered trademark of Ausimont USA, Inc.