Nylon 12 Solar & Weather Resistant Cable Tie

Technical Specifications

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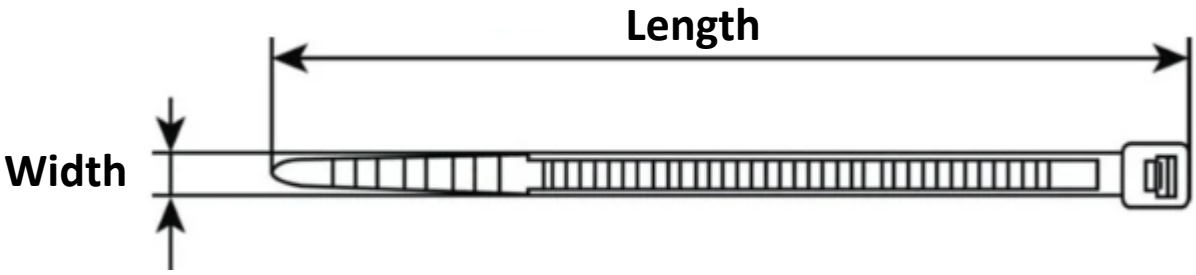
Overview

Kable Kontrol Solar and Weather Resistant Cable Ties are made of **VESTAMID L1670 Black 9.7504**; a specialized **Nylon 12** polyamide. This specified material is known for its low viscosity, heat, and light stabilization. This material also features a carbon additive, making it resistant to UV degradation. This material's operating temperature is -40°F to + 185°F, and can withstand short bursts of heat up to 230°F.

Kable Kontrol Solar and Weather Resistant Cable Ties are infused with carbon black. This specialized additive ensures UV stabilization equivalent to 24 years of weather exposure.

Country of Origin: China



SKU	Length	Width	Tensile Strength
CTN12-08-50-100-BK	8”	4.78mm	50 lbs.
CTN12-14-50-100-BK	14”	4.78mm	50 lbs.

Material Properties

	dry / cond	Unit	Test Standard
Mechanical Properties ISO			
Tensile Modulus	1600 / -	MPa	ISO 527
Tensile Strength	47 / -	MPa	ISO 527
Yield Stress	47 / -	MPa	ISO 527
Yield Strain	8 / -	%	ISO 527
Stress at 50% Strain	33 / -	MPa	ISO 527
Stress at Break	37 / -	MPa	ISO 527
Nominal Strain at Break, ƐtW%	220 / -	%	ISO 527
Charpy Impact Strength, +23°C	N / -	kJ/m^2	ISO 179 / 1eU
Charpy Impact Strength, -30°C	N / -	kJ/m^2	ISO 179 / 1eU
Charpy Notched Impact Strength, +23°C	3 / -	kJ/m^2	ISO 179 / 1eA
Type of Failure	C / -	-	-
Charpy Notched Impact Strength, -30°C	5 / -	kJ/m^2	ISO 179 / 1eA
Type of Failure	C / -	-	-
Thermal Properties			
Melting Temperature	178 / *	°C	ISO 11357-1 / -3
Glass Transition Temperature	37 / *	°C	ISO 11357-1 / -2
Temp. of Deflection Under Load A, 1.80 MPa	50 / *	°C	ISO 75-1 / -2
Temp. of Deflection Under Load B, 0.45 MPa	120 / *	°C	ISO 75-1 / -2
Vicat Softening Temperature A, 10 N, 50 K/h	170 / *	°C	ISO 306
Vicat Softening Temperature B, 50 N, 50 K/h	140 / *	°C	ISO 306
Coeff. Of Linear Therm. Expansion, 23°C to 55°C, Parallel	150 / *	E-6 / K	ISO 11359-1 / -2
Physical Properties			
Water Absorption	1.4 / *	%	Sim. To ISO 62
Humidity Absorption	0.7 / *	%	Sim. To ISO 62
Density	1010 / -	kg / m^3	ISO 1183
Burning Behavior			
Burning Behavior at Thickness	HB / *	Class	IEC 60695-11-10
Thickness Tested	3.2 / *	mm	-
Burning Behavior at 1.5 mm Nominal Thickness	HB / *	Class	IEC 60695-11-10
Thickness Tested	1.6 / *	mm	-
Glow Wire Flammability Index (GWFI)	960	°C	IEC 60695-2-12
GWFI—Thickness Tested (1)	1	mm	-
Glow Wire Flammability Index (GWFI)	960	°C	IEC 60695-2-12
GWFI—Thickness Tested (2)	2	mm	-
Glow Wire Ignition Temperature (GWIT)	850	°C	IEC 60695-2-13
GWFI—Thickness Tested (1)	1	mm	-
Glow Wire Ignition Temperature (GWIT)	850	°C	IEC 60695-2-13
GWFI—Thickness Tested (2)	2	mm	-

Material Properties [cont.]

	dry / cond	Unit	Test Standard
Electrical Properties			
Relative Permitivity, 100 Hz	3.8 / -	-	IEC 62631-2-1
Relative Permitivity, 1 MHz	2.2 / -	-	IEC 62631-2-1
Dissipation Factor, 100 Hz	450 / -	E-4	IEC 62631-2-1
Dissipation Factor, 1 MHz	280 / -	E-4	IEC 62631-2-1
Volume Resistivity, pV	1E13 / -	Ohm*m	IEC 62631-2-1
Electric Strength, AC, S20 / P50	27 / -	kV/mm	Sim. To IEC 62631-2-1
CTI, Test Solution A, 50 Drops Value	600 / -	-	IEC 60112
Rheological Properties			
Melt Volume-Flow Rate, MVR	79 / *	cm^3 / 10min	ISO 1133
Temperature	230 / *	°C	-
Load	2.16 / *	kg	-
Molding Shrinkage, Parallel	1.4 / *	%	ISO 294-4, 2577
Molding Shrinkage, Normal	0.7 / *	%	ISO 294-4, 2577

UV Resistance

Kable Kontrol Solar and Weather Resistant Nylon 12 Cable Ties have impressive solar and weather resistance equivalent to 24 years of exposure.

Chemical Resistance

Kable Kontrol Solar and Weather Resistant Nylon 12 Cable Ties feature excellent resistance to chemicals, including oils, greases, fuels, and salts. This product is particularly resistant to hydrocarbons and weak acids/bases, making it suitable for application where such exposure is present.

Flame Resistance

Kable Kontrol Solar and Weather Resistant Nylon 12 Cable Ties have a **UL94-HB** rating meaning they possess moderate flame resistance.

Effects of Heat Aging

Kable Kontrol Solar and Weather Resistant Nylon 12 Cable Ties handles heat exposure better than other polyamides. Exposure to high heat is tolerated in the short term, but can lead to oxidation, embrittlement, and reduced mechanical strength in the long term.

Hydrolytic Stability and Water Absorption

One key advantage to **Kable Kontrol Solar and Weather Resistant Nylon 12 Cable Ties** its low moisture absorption (typically under 1%). Unlike Nylon 66 which may swell or weaken with moisture exposure, Nylon 12 maintains its dimensional stability and mechanical properties in wet conditions.

Effects of Radiation

Kable Kontrol Solar and Weather Resistant Nylon 12 Cable Ties have moderate resistance to radiation, but prolonged exposure to ionizing radiation can cause chain scission, embrittlement, and loss of mechanical strength.

Loss of Weight with Aging

Kable Kontrol Solar and Weather Resistant Nylon 12 Cable Ties typically exhibit minimal weight loss overtime, especially in dry environments. However, prolonged exposure to high temperatures, strong oxidizers, or aggressive solvents can lead to gradual degradation and mass loss due to polymer breakdown.

Kable Kontrol Nylon 12 Solar Cable Ties comply with REACH regulations.

REACH is a European Union Regulation designed to ensure the safe ue of chemical to protect human health and the environment. This regulation is managed by the European Chemicals Agency (ECHA). REACH requires manufacturers, importers, and users of chemicals to register, assess, and manage risks associated with substances produced or imported in quantities over one ton per year.

Kable Kontrol Nylon 12 Solar Cable ties comply with RoHS regulations.

RoHS is a European Union Regulation that restricts the use of 10 hazardous substances in electrical and electronic equipment. It aims to reduce environmental pollution and protect human health by limiting toxic materials.