

K-Spec core yarn strength retention is based on test results of components at 65°C/150°F (or less) for 6 months. K-Spec has a 100% strength retention when exposed to: Age, 10% detergent solution, rot and mildew, sunlight and Toluene; 99% strength retention when exposed to: acetic acid, gasoline, hydrochloric acid 1m, hydraulic fluid, kerosene, and sea water; 98% retention when exposed to: 25% ammonium hydroxide, 10% hypophosphite solution, and 40% phosphoric acid; 97% retention when exposed to 5m sodium hydroxide; 95% retention when exposed to Portland cement and sulfuric acid; and 88% retention when exposed to Clorox® bleach and nitric acid.

9.0 - Fiber Characteristics

	Nylon	Polyester	Liquid Crystal Polymer (LCP)	UHMwPE	Aramid	K-Spec
Tenacity – dry g/d	7.5-10.5	7.0-10.0	26-29	35-40	28	35
Elongation at Break %	15-28	12-18	3.8	3.5-3.8	4.6	3.8
Moisture regain %	4.0-6.0	<0.5	<0.10	0	2	0
Melting Point	425°F 218°C	490°F 254°C	625°F 330°C	300°F 149°C	900°F 482°C	320°F 160°C
Specific Gravity	1.14	1.38	1.41	.97	1.38	1.11
Cold-Flow (Creep)	Negligible	Negligible	Negligible	Negligible to High	Negligible	Negligible

Cold-Flow (Creep) is defined as fiber deformation (elongation) due to molecular slippage under a constant steady static loading situation. Fibers that have this inherent characteristic will display extremely low or negligible creep if minor fluctuations occur in the rate and/or frequency of load levels. In rope form, this would apply to polypropylene, polyethylene, and HOPE Olefin fibers.

Chemical Resistance of K-Spec® Core Yarn

Available only in Twin-Path® Extra Slings

Strength Retention After Chemical Immersion

	K-Spec® Core Yarn	
	6 Mos.	2 Yrs.
Seawater	100%	100%
Hydraulic Fluid	100%	100%
Kerosene	100%	100%
10% Detergent Solution	100%	100%
Gasoline	100%	100%
Toluene	100%	96%
Glacial Acetic Acid	100%	100%
1M Hydrochloric Acid	100%	100%
5M Sodium Hydroxide	100%	100%
Ammonium Hydroxide (29%)	100%	100%
Perchloroethylene	100%	100%
Clorox Bleach	91%	73%
Hypophosphite Solution (10%)	100%	*No Data
Nitric Acid (50% by Volume)	97%	*No Data
Sulfuric Acid (50% by Volume)	100%	*No Data
Phosphoric Acid (50% by Volume)	95%	*No Data

**No Data = Sample not tested*