

K-Spec™ High Performance Fiber

K-SPEC™ HIGH PERFORMANCE FIBER

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The advances in man made synthetic fibers, used for cordage and slings, has reached a crescendo in the last ten years. New products are coming to market from the major chemical companies around the world.

It all began in the 30's with nylon developed by DuPont, then polyester, polypropylene, and polyethylene followed. These were the first and became the foundation for even stronger products that are produced in the new century.

DuPont also pioneered the second generation of these basic synthetics with the invention of Kevlar® Aramid fiber in the 60's by scientist Stephanie Kowaleck. Following came other hybrids such as Technora® from Teijin in Japan, Twaron® from Akzo Products, Vectran® from Celanese, Spectra® from Allied, now Honeywell, and Dyneema® from DSM in the Netherlands. Another new fiber produced in Japan but not commercially available in quantity is PBO or Zylon®. All of these new materials were specifically designated as high performance materials because they had greatly increased strength or grams per denier.

It is not possible to develop a single fiber that will have all of the characteristics to fulfill the end use of every conceivable product. Desirable characteristics may include lightweight, stretch, chemical resistance, strength, cost, creep, temperature effects, fatigue and abrasion resistance, ultra-violet response, and availability. It does the consumer no good to be aware of a fiber that out performs every other, yet is not commercially produced in the required quantities. Sometimes, a combination or blend of available fibers will best meet the engineering specifications to most benefit the final design.

In rigging slings made for overhead lifting of heavy loads, certain advantages are gained from the use of these new synthetic materials. A single core yarn has been developed that incorporates all of the most desired features wanted in a sling used in the rigging field today. This material is K-Spec™ fiber, engineered and produced by SLINGMAX® Inc. in their Kernersville, North Carolina facility. Properties of this revolutionary material are high strength, 1% stretch at rated capacity, good chemical, abrasion and fatigue resistance, light weight and commercial availability.

Slings manufactured using K-Spec™ fiber are called Twin-Path® Extra slings. They provide the rigger with a tool that is 90% lighter than steel, has little stretch, and is repairable if damage occurs. It follows that a lighter tool increases safety and productivity, providing benefits to the bottom line.

As new materials come into being, those with increased benefits for the end user, will be incorporated into K-Spec™ fiber, enhancing the Twin-Path® Extra sling, and helping to maintain its place of leadership in the rigging field.