

Quality Fabric of The Month

Future Denim: Cone Denim has teamed with DSM Dyneema to develop a lighter-weight performance denim fabric that offers high strength while retaining an authentic denim look.

Cone Denim, Greensboro, N.C., has been producing denim fabrics since 1891, and from early on it has been a leader in the development of new denim technologies and platforms. Through a partnership with Dyneema® ultra-high-molecular-weight-polyethylene fiber producer DSM Dyneema, the Netherlands, the company has developed a high-strength performance denim that retains the authentic look and touch of classic denim. Cone reports the denim offers two- to four-times greater tensile and tear strength than conventional cotton fabric of the same weight.



Cone® 3D, Cone's research and development incubator, and The Dyneema Project, DSM Dyneema's innovations program for premium apparel brands, are leading development efforts for the new denim platform. According to Steve Maggard, vice-president product development and Cone 3D, Cone sees technical denims — in which strength, moisture management, high stretch and other such features are incorporated into the fabrics — as a growth area. "Dyneema is a natural fit for us and gives us a really good option in working toward really high-strength technical fabrics," Maggard said.

Dyneema ultra-lightweight fiber is up to 15 times stronger than steel and up to 40-percent stronger than aramid fiber weight for weight. Therefore, it offers the possibility of making a high-strength denim with a lighter weight than denim made with other high-strength fibers, Maggard noted, adding, "but you can also use less of it as a percentage of the fiber blend, which enables you to keep a more authentic denim look. If you're putting in 8- to 10-percent Dyneema, there's still enough cotton in the blend to absorb the indigo and other chemicals, so the garment still looks authentic."

The yarns for the new denim are spun by Patrick Yarns, Kings Mountain, N.C., and woven into cloth at Cone's White Oak Plant, which opened in Greensboro in 1905 and produces the company's premium and vintage denims.

The first end product featuring the fabric was San Francisco-based Levi Strauss and Co.'s limited-edition men's Levi's® 501® Centennial Jean, created to celebrate the 100th anniversary of Levi's and Cone's partnership. That product — featuring an intimate blend of 10-percent Dyneema and 90-percent cotton, and billed as Levi's lightest, strongest jean — sold out quickly, according to Neil Bell, who handles business development in North America for DSM Dyneema, and who previously served as Levi Strauss's global fabric innovation manager.

Cone showed several garments with Dyneema at the Outdoor Retailer Summer Market in Salt Lake City and received a very positive response, Maggard said, adding that several companies are now sampling Cone's fabrics. He and Bell both mentioned several targeted end-uses for the fabric, mainly in performance markets including motorcycle, hiking and outdoor, and safety apparel. Meanwhile, development is ongoing, and the two companies are looking at incorporating moisture management and stretch into the fabrics to further enhance comfort levels.

For more information about Cone Denim's high-strength performance denim with Dyneema®, contact Steve Maggard, steve.maggard@itg-global.com.