RISE TO THE CHALLENGE: COOLVISIONS/THE NORTH FACE

After 18 months of development, The North Face brought to market this autumn a selection of outdoor shirts made from a combination of cotton and CoolVisions dyeable polypropylene fibre. This article, the sixth in our series highlighting supply chain collaboration, explains the hard work that went into the project.

Shirts show promise of dyeable polypropylene

Outdoor apparel company The North Face (TNF) has incorporated material from dyeable polypropylene brand CoolVisions into its new Staircase Rapids, Yorkville and Sand Point flannel shirts. The products hit retail stores in the US this autumn.

The North Face made an announcement about using the new polypropylene fibre, developed by FiberVisions, in a 45-55 mix with cotton in the shirts last year.

Peter Hernandez, the clothing company's senior product manager for outdoor and sportswear, said at the time: "We are impressed with CoolVisions' combination of thermal insulation, moisture management and durability in a lightweight fabric. The dyeable polypropylene lets us offer rich colour combinations in a unique, technical product. The fabric we have chosen blends the comfort and breathability of cotton with the technical benefits of the CoolVisions fibre."

The shirts, each of which is available in three or four plaid colour combinations, arrived in TNF stores, as well as in the stores of a selection of multi-brand retail groups (including REI, Altrec and Backcountry), on time. TNF describes them as ideal for everyday hiking or travel, with details such as a special passport-size pocket built in.



The North Face's Staircase Rapids Flannel shirt featuring CoolVisions dyeable polypropylene fibre.

The North Face

The polypropylene and cotton blend is light in weight but "heavy on substance" the clothing brand continues, delivering warm insulation without bulk in cool conditions, and high levels of moisture management in warmer weather to leave the body at a consistently comfortable temperature. Quick to dry, the CoolVisions fabric is also durable thanks to its abrasion-

resistant qualities, making the new products shirts that are "built to last", TNF says.

But making the shirts with this new mix of fibres presented a series of challenges that the two partner companies and the mills they are working with were only able to overcome with creativity, close collaboration, good communication and lots of hard work.

Mr Hernandez's colleague, materials manager Vijay Somasundaram, had to roll up his sleeves at certain points in the product development process and travel to Asia to lend the mills his expertise. The light weight and softness of CoolVisions are two of its main attributes, but they also presented the mill partners with difficulties in achieving the bulk production needed to meet TNF's volume requirements.

"This combination wasn't being used in the marketplace and there have been challenges," Peter Hernandez says. "But we have made it. We did get it to market on time and we will be repeating it for fall 2011."

For his part, Mr Somasundaram is sure all the effort was worthwhile. He likes the combination of cotton and polypropylene because of its light weight and because of its eco-friendliness. "You could describe CoolVisions as a by-product of petroleum, a by-product that if you don't use it, you waste it. Using it to make a fibre that we can then put into our shirts is a great way of bringing the supply chain full circle."

He adds that people used to think you couldn't use polypropylene in this way because you couldn't make it comfortable enough and it had a strong smell. But not now. Plus, with high prices and supply volatility in the international cotton market, he contends that it is good for clothing brands to have extra options.

To reach delivery of the finished shirts took around 18 months of product development. Dyeing the polypropylene is not easy because if you heat it too much, it doesn't work, the fibres become almost crystalline in form. The TNF materials manager acknowledges that there was a lot of work to do with different mill partners before he felt confident that it would be possible to use the CoolVisions-cotton combination to make brushed, flannel-type plaid shirts for the autumn and, he confirms, a lighter, napped shirting material for the spring.

Of all the challenges this project presented, the one Vijay Somasundaram says he's most pleased to have overcome is the hand-feel of the finished material that has gone into the shirts. During some of the early attempts, the heat was too much for the fabric, even causing it to melt down on occasions. But anyone who has touched a sample of the Sand Point, Staircase Rapids or Yorkville can testify that the end result is of the highest quality.

Throughout the product development period, Mr Somasundaram stayed in regular contact with the CoolVisions team, working with them to make it clear to mills what was needed. "This is not like any other fibre," he says again. "It's not easy to work with, not a fibre you can just take and play with. So we have had to meet frequently and talk to stay on top of things. And we had to be determined that we were not going to give up. It was tiring at times, but I think what we have ended up with is a next-generation combination of fibres, something we can use to create new things."



Retro pink women's Yorkville Flannel shirt – part of The North Face's new autumn collection.

The North Face

FiberVisions: CoolVision Typical properties

**All measurements are conducted under standard atmosphere according to ISO 554 (23°C/50% relative humidity).*

	Nom.Value	Property	Reference
9 km	1.2–1.5	Titer (denier per filament)	ASTM D1577
	3.0–4.6	Tenacity (g/denier)	ASTM D1577
	25–60%	Elongation at break	ASTM D1577
	38, 62	Fibre length (mm)	ASTM D1577
	100% PP 140–150°C 162°C	Raw material Softening point Melting point	as described in ASTM D3937
10 cm	Adjustable	Crimp Frequency	ASTM D3937
	Adjustable	Finish level as weight %	Internal FV test

FiberVisions

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