




TEXTURES

2017

AMERICAN
TEXTILES

WE MAKE AMAZING



Companies like JB Martin use
velvet in innovative ways.
pg.15

Dear Readers,

Today, American textiles are more than basic fibers, yarns and fabrics. From robust carbon fibers that fortify aircraft to advanced medical applications that help patients heal, textiles are quietly sustaining and improving everyday life. As companies who innovate and manufacture these amazing products, members of the National Council of Textile Organizations (NCTO) are proud to be part of an industry that gives people better, healthier, more fulfilling lives.

Our second annual edition of Textures will take you on a journey that illustrates American textiles' contemporary renaissance. You'll get firsthand perspectives and insights from thought leaders and change-makers on the groundbreaking developments and real-life stories that personify the textile industry's impact on our nation and the globe.

Through the various stories included in this publication, you'll gain insight into the modern U.S. textile sector and the bright, resilient, talented people who make our industry the global leader in product innovation and quality. People who are creatively reshaping the norm. People who aren't afraid to take risks. People whose inventive strategies and smart, efficient processes are making the world a greener, smarter, healthier, safer place.

NCTO is pleased to share this inside look into a truly amazing industry. We hope this edition of Textures gives you a deeper appreciation for a great American industry that makes an incredibly important and positive impact on each of our daily lives.

Sincerely,



Rob Chapman
Chairman, NCTO
Chairman & CEO, Inman Mills



Augustine D. Tantillo
President & CEO, NCTO

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North Carolina-based Valdese Weavers is creating upholstery fabrics to meet the unique needs of today's customers.

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COMMUNICATE

Send comments and story ideas to stories@NCTO.org.

CONTACT US

For more information about NCTO and its mission, contact us at (202) 822-8028 or visit NCTO.org.

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A photograph of a man in a blue and white checkered shirt and khaki pants working on a large, complex textile machine in a factory. The machine has many spools of thread and is filled with colorful threads. The background is slightly blurred, showing other parts of the factory. The image is overlaid with a blue diagonal graphic element in the top left corner and a dark blue diagonal graphic element in the bottom right corner, which contains the text.

ANNUAL CAPITAL INVESTMENTS BY U.S. TEXTILE MILLS SURGE

Before a single pound of yarn can be spun or a yard of fabric can be woven, a capital investment must be made to secure the means of production. In a positive sign, capital investments by America's textile industry have surged during recent years, driven by growing demand for innovative textile products, expanding exports and greater recognition of the added value of domestic sourcing. In the most recent government statistics, annual capital investments by U.S. textile mills reached nearly \$1.7 billion in 2015, a 75 percent increase from \$960 million in 2009.

**National Spinning's
\$12 million manufacturing
center in Maiden, North
Carolina, is projected to
create up to 65 new jobs.**

National Spinning, a North Carolina-based, employee-owned company founded in 1921, is one such example of how demand for technically advanced textiles is driving capital expenditures in America's textile industry. Nonwovens are textiles made from long fibers, bonded together by chemical, mechanical, heat or solvent treatment instead of being woven or knitted together. In 2012, National Spinning identified this market as a growth opportunity to complement its long-held leadership in specialty yarns.

To execute its strategy, National Spinning acquired a nonwoven fabric manufacturer in Lincolnton, North Carolina. Soon, the company was supplying a wide range of innovative fabrics for the automotive, home appliance, construction, noise abatement, insulation and bedding markets from its Carolina Nonwovens division. Its entry into the nonwovens business was so successful that National Spinning had to quickly consider expansion options.

"We weren't able to expand at the existing location, and we couldn't find a suitable existing building within a 20-mile radius, which was essential because we were committed to keeping our existing employees onboard with



the expansion," said Jim Booterbaugh, president of National Spinning. "That's when we decided to go 'greenfield' and build a new plant on an 11-acre site nearby in Maiden, North Carolina." By designing a new manufacturing center from the ground up, National Spinning built a facility tailored to its nonwovens business. The new facility emphasized a simplified workflow, enhanced flexibility, improved quality, increased efficiency, space for ancillary services and a positive work environment. Grand opening festivities for the \$12 million, 92,000-square-foot manufacturing center, projected to create 65 new jobs, were held in July 2016.

**TECHNOLOGY A MAJOR FACTOR IN
CAPITAL INVESTMENTS**

Continual innovations in textile equipment and processes are also driving capital investments by U.S. textile companies as illustrated by a recent expansion by INVISTA, an international leader in the production of nylon, spandex, polyester and specialty materials.

In August 2016, INVISTA announced a \$30 million expansion of its fiber manufacturing plant in Camden, South Carolina. This investment represented the industry's first one-step, small-lot capability specifically for solution-dyed

nylon 6,6 — a form of nylon with superior resilience and stain resistance for carpet.

**In 2016, INVISTA announced
a \$30 million expansion of its
fiber manufacturing plant in
Camden, South Carolina.**

"Our mill customers and the design community rely on INVISTA to offer a palette of hundreds of solution-dyed nylon 6,6 colors for each of their unique design preferences," said Marc Ahrens, vice president of INVISTA's specialty flooring business. "The new technology is expanding our capability to offer sophisticated color families while improving service."

INVISTA developed its new, proprietary small-lot technology by working closely with international textile equipment leader Truetzschler, which supports manufacturing and customer service sites all around the world. The variety of small-lot nylon 6,6 fibers are initially being offered under INVISTA's Antron® Lumena™ brand to serve expanding global markets.

PERCEPTIONS SHIFTING TOWARD DOMESTIC SOURCING

Yet another factor favoring capital investments by the U.S. textile industry is a growing recognition that sourcing offshore is not always as profitable as sourcing regionally or even locally for brands and retailers. While conventional wisdom has long held that clothing and home furnishings must be sourced from Asia to be price-competitive, recent research illustrates that certain initial cost advantages can quickly disappear due to the inherent disadvantages of sourcing overseas.

“Sourcing products from Asia requires long lead times, which can result in a mismatch of production and consumer demand,” said David Sasso, vice president of sales for Buhler Quality Yarns of Jefferson, Georgia, a leader in luxury-branded yarns made from Supima cotton. “When a brand orders so far ahead of the market, it can easily order too much

product, which results in heavy discounting, or it can order too little, which means it won’t meet demand. The goal of our industry is to help brands document the real costs of sourcing abroad.”

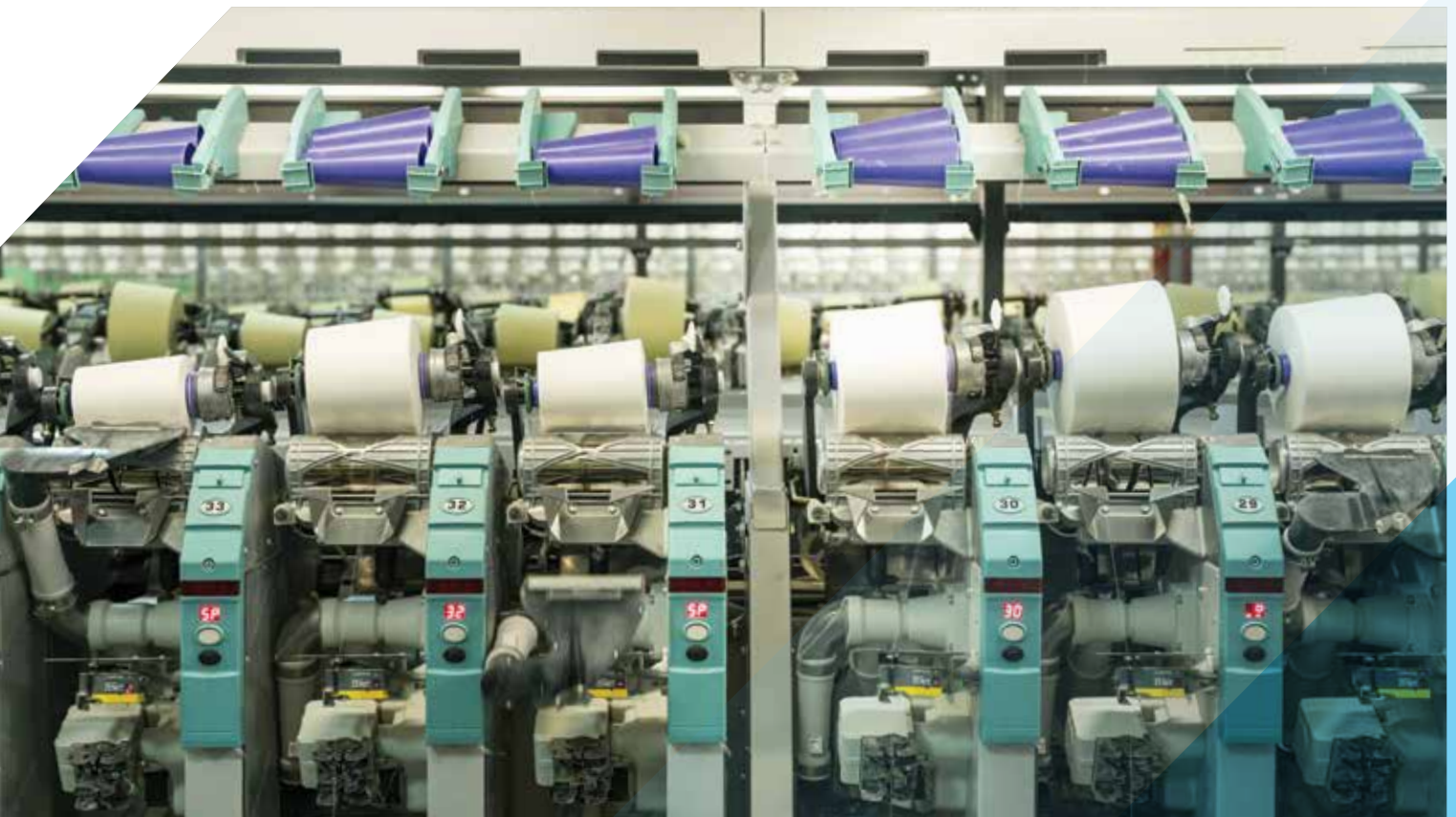
To create greater efficiency and speed-to-market in the apparel supply chain, Buhler Quality Yarns is one of many advocates for an interactive cost-calculating tool innovated by MIT’s Sloan School of Management. By working with the National Cotton Council and others who specialize in supply chain processes and technologies, Buhler is using the tool to deepen the apparel industry’s understanding of how to more accurately value the time and risk involved with offshoring.

“This new tool enables brands to analyze the variables that can turn an initial price advantage from Asia into money left on the table because of having to order several weeks ahead of the market,” Sasso said.

“We also emphasize to our customers the risks involved in international shipping and the potential loss of intellectual property when working with non-domestic sources.”

For Sasso, one of the strongest arguments for domestic sourcing is the opportunity for brands and various elements of the textile supply chain to collaborate in creating value-added products that will inspire consumers to buy.

“When the supply chain starts thinking like a consumer, we can come up with so many ideas that can help designers create better products that improve margins for everyone,” he said. “We know that by sourcing domestically, this type of collaboration is far easier and far more effective.”



FOR AMERICAN UPHOLSTERY MANUFACTURERS, FABRIC IS A COMMITMENT TO EXCELLENCE

American textile manufacturers have found the secret to thriving.



We're living in an age of globalization, automation and instant gratification.

That's exciting, but it can spell trouble for some manufacturers. Those who can't operate at breakneck pace and meet ever-evolving customer demand are forgotten; those who can keep up sometimes sacrifice product quality and customer relationships to do so.

But American textile manufacturers have found the secret to thriving. Two such companies, Pennsylvania-based Sunbury Textile Mills and North Carolina-based Valdese Weavers, are creating upholstery fabrics to meet the unique customer needs of today. These companies are market leaders in the U.S. thanks to their long-term dedication to quality, customization, innovation and customer service.

QUALITY IS PARAMOUNT

Quality is a significant differentiator between domestic products and those made overseas.

“Most of the products you can purchase from overseas manufacturers are not anything special,” said Mark Grigalunas, senior vice president of styling and design at Sunbury Textile Mills. “The makers of those fabrics are playing a price game; they can’t compare to the quality of upholstery materials made in the United States.”

While quality is a major point of emphasis for U.S. companies, successful American textile manufacturers must also be nimble. How quickly a new trend or fabric

style is adopted and produced can impact customer perception of the company and future growth.

American manufacturers are much better positioned than their global counterparts to identify trends and adjust quickly.

Blake Millinor

*Chief Sales and Marketing Officer
Valdese Weavers*

“Whether it’s aesthetics, performance or other criteria, the market is constantly changing,” said Blake Millinor, chief sales and marketing officer at Valdese Weavers. “American manufacturers are much better positioned than their global counterparts to identify trends and adjust quickly.”

CUSTOMIZATION DRIVES PRODUCTION

Today’s consumer is looking for eye-catching fabrics that can withstand the wear and tear of daily life and make a personal statement about his or her tastes and lifestyle.

Superior customization capabilities allow manufacturers to meet this demand.





“Working with customers to create unique custom fabrics is essential in today’s market,” said Laura Levinson, chief creative officer at Valdese Weavers. “That includes differences in construction, fiber, color and weave.”

As American manufacturers continually adjust to meet high expectations when it comes to custom upholstery fabric, a common theme emerges: performance.

“Interiors are becoming more casual with a focus on the family room,” Levinson said. “Stain-resistant and stain-repellent upholstery materials are taking off in the home segment.”

But customers want more than durable fabric. They want durable fabric that is also soft, welcoming and beautiful.

“Customers today have higher expectations and demands for fabric styles and performance than ever before,” said Tom Notaro, senior vice president of sales and marketing with Sunbury Textile Mills. “They want a high aesthetic with

soft texture and performance properties that come together in a highly desirable, valuable product.”

INNOVATIVE TECHNOLOGY AND INFRASTRUCTURE

Providing quality materials in a short time frame requires the highest technical capabilities.

That’s one reason why American upholstery manufacturers remain committed to innovation. Robust computer systems provide enormous support to manufacturers, not only in creating unique designs, but also in optimizing production and quality throughout the supply chain.

“Advanced software allows us to generate designs in a short amount of time,” Levinson said. “Our design system is fast and powerful and is completely digital, from the loom to fabric finishing. This gives us critical advantages in the

breadth of design options and speed to market.”

According to Notaro, investing in a state-of-the-art infrastructure also helps American upholstery manufacturers stay ahead of offshore competitors.

“Sunbury annually invests in new equipment,” Notaro said. “We invest in our company every year, from systems to design tools. If American companies stand still, global competition will catch up. It’s imperative to keep moving forward.”

RELATIONSHIPS ARE THE FABRIC OF BUSINESS

But perhaps the most significant advantage American upholstery makers have is not something you can find in new machinery or on a financial report.

“There’s no replacement for building deep, loyal relationships with customers,” said Mike Shelton, president and CEO of Valdese Weavers. “At Valdese, we don’t sell what we make, we make what we sell. Our creations are usually a custom fabric collaboratively developed with a client. We are always trying to meet their needs.”

Meeting the needs of the customer is one aspect of the relationship. Reliability is another.

“Our customers are more than willing to work with us because they know our time frame on bringing their designs and creations to life,” Grigalunas said. “When we quote production and delivery dates, they know it’s the truth. We don’t make promises if we can’t deliver.”

And for many of the most successful American textile mills, relationships and loyalty aren’t limited to customers.

“Our people live and work in our communities,” Notaro said. “We are a local, American-driven company that invests in our people. We care deeply about our employees and associates. They are our foundation, and they will continue to drive our success.”

SUSTAINABILITY CORE TO RESURGENCE OF AMERICA'S TEXTILE INDUSTRY

Recycling everything from plastic bottles to old fabrics, U.S. textile manufacturers are protecting our environment in innovative ways.

Sustainability is crucial to protecting the earth's future, and America's textile industry is doing its part in many ways. From plastic bottles to old fabrics, U.S. textile manufacturers are finding innovative ways to incorporate recycled materials into a broad array of consumer and industrial goods. This aggressive development of sustainable American textiles has created the need for recycling specialists within the domestic industry.

William Barnet & Son is a manufacturing, recycling and trading company operating sales and manufacturing facilities in the U.S., Europe, Asia and Central America. The company traces its roots to 1898 and specializes in many synthetic post-industrial materials including polyester, nylon and acrylic.

Acquiring raw materials like tire remnants, old airbags and discarded carpet that would otherwise be destined for a landfill, Barnet recycles these used materials into fibers and yarns for textiles for numerous markets, including construction, filtration systems, bedding, furniture, roofing and autos.

Barnet's newest project is a joint venture with Albis Plastic of Hamburg, Germany. Albis is a specialist in the design and compounding of plastics used in automotive components in Europe. The company is building a production facility for engineering plastic compounds in Duncan, South Carolina, where Barnet operates a recycling facility. By colocating, Albis and Barnet plan to collaborate on the manufacturing of advanced plastic compounds. This joint venture is a \$14 million investment that will create up to 60 new jobs.

"Our joint venture with Albis is a win-win," said Chuck Hall, vice president for sales and manufacturing with Barnet. "It enables us to expand our reach into the Southeast's growing automotive supply chain and gives Albis a base in North America. By working together, we can achieve our strategic goals much more quickly than we could by working alone."

SUSTAINABILITY ENCOMPASSING ALL TYPES OF TEXTILES

While William Barnet & Son focuses on sustainability in the world of synthetics, Goetz & Sons of Dallas, Texas, is contributing to the sustainability of the cotton industry. A buyer and global seller of cotton waste products, the company has processing plants

in Louisiana and Texas and warehousing and sales/purchasing offices in California and South Carolina.

Byproducts of cotton ginning include motes, a cotton-bearing waste stream produced during the final cleaning of raw cotton. Motes can be semi-cleaned at the gin, put in shippable bales and sold to the cotton re-gin trade. Goetz & Sons buys semi-cleaned motes from gins across the U.S. cotton belt and further cleans them for use in low-count yarns for products such as denim and canvas boat bags. Re-ginned motes are also a raw material for cotton balls, ear swabs and make-up removal pads.

"Our company handles about 25 million pounds of cotton fibers every year," said Jack Goetz, president of Goetz & Sons. "We are pleased to have many markets where we can place our raw material. This allows us to pay a nice price to the gins for a product that only a few short decades ago was otherwise taken to a landfill or burned on-site at the gins."

TEXTILES SUSTAINABILITY ADVANCING WITH TECHNOLOGY, INNOVATION

As to how far the U.S. textile industry can take sustainability, the sky's the limit. Advancing technology and a focus on innovation touch everyday lives by making America greener and cleaner. It is a virtual certainty that if you walk around your house, peek into your car or check out a construction site, you will encounter a textile product made from recycled material. The fact that it is nearly impossible to discern recycled material from a non-recycled product is a testament to the ingenuity and emphasis on quality that permeate the U.S. recycled-textile production chain.

"One of the most important elements in recycling is the way in which sustainability is built into product design," Hall said. "I'm not aware of any company today that approaches product design without considering how the product can be recycled at the end of its useful life. This is one of the many reasons the U.S. textile industry is making strides in sustainability for the benefit of everyone." ■

A misty forest scene with two people walking away on a path. The person on the left is wearing a bright blue puffer jacket and carrying a colorful bag. The person on the right is wearing a dark jacket and a grey beanie. The forest is dense with tall trees and a thick layer of fallen leaves on the ground. The overall atmosphere is serene and natural.

**"One of the most important elements
in recycling is the way in which
sustainability is built into
product design."**

Chuck Hall

Vice President for Sales and Manufacturing
William Barnet & Son

WOMEN IN TEXTILES: WEAVING THEIR WAY TO THE TOP

Women are making their mark, and they're doing it in highly technical positions.

Randy Rubin is co-founder and chairman of Crypton, a Michigan-based fabric manufacturer. She takes distinct pride in pointing out that on any given day, most of us will likely sit on a fabric she helped create.

"I'm willing to bet that if you go to a mall, restaurant, hotel, nursing home or hospital waiting area, you're going to be sitting on Crypton, and I get so excited when I know I'm sitting on our technology!"

But Rubin doesn't take her success lightly. In the early '90s, Rubin and her husband started their company out of the basement of their home. He invented Crypton, a heavy-duty, stain-resistant fabric that doesn't look heavy-duty. She figured out how to patent and brand it, but they needed someone to manufacture the fabric.

"There was not one woman in sight," Rubin said of one of their first factory visits. "We went to the mill, and all of the executives were men."

Still, Rubin managed to cut a deal to have their first fabric produced. From there, she soared.

Since that early factory visit, Rubin's company has grown by leaps and bounds. Crypton has manufacturing operations in North Carolina; today it holds 25 different patents and has sold more than 150 million yards of Crypton fabric. It also acquired Nanotex®, a leading fabric innovation company, and recently was named best in innovation at the International Textiles Alliance (ITA) awards gala.

We created a reason why the American mills could get made-in-America business by only licensing American mills to use our technology.

Randy Rubin

Co-Founder and Chairman, Crypton

"We invented this fabric and had very little money, but we were gutsy. We always say that we were never both scared on the same day," Rubin said.

Today, the brainchild of Rubin and her husband is still one of the most innovative brands in the textile industry.

She says she may have been a fish out of water when they got started, but Rubin believes they helped change the industry for the better. "We created a reason why the American mills could get made-in-America business by only licensing American mills to use our technology. We became an important part of their business because they had a protected brand to sell," she said.

I think there's real strength in females who have a great aesthetic and innovative ideas.

Dr. Nancy Cassill

*Associate Dean for Academic Programs
North Carolina State University*

While Rubin was a bit of a pioneer, women in leadership positions are increasingly common within the broader textile industry.

Dr. Nancy Cassill is one such example. In 2000, she was the first female full professor recruited into North Carolina State University's College of Textiles, one of the world's premier textile research institutions.

Now associate dean for academic programs — another first for a woman — Cassill says there are more women coming to the college looking to get into the textile industry than ever before. In fact,



Randy Rubin

Co-Founder and Chairman, Crypton

72 percent of the college's student population was female in 2016, compared to just 43 percent in 1998.

Several reasons explain the uptick.

One is the college's focus on pre- and post-production areas of design, brand marketing, new product development and global sourcing. Another is its work to build stronger partnerships industrywide.

As part of this effort to mold America's next generation of talented textile makers, Cassill helped create the nation's only bachelor of science degrees in fashion and textile management and fashion and textile design. She also established the college's Industry Advisory Board, composed of 22 textile executives, and currently is working to create a new Student Life Center to nurture student leadership and career development.

But Cassill also believes women are drawn to the industry's growing emphasis on product diversification in apparel, home/furniture, industrial and more.

"I think there's real strength in females who have a great aesthetic and innovative ideas. Females make the majority of textile-related purchases in the home, and I think women contribute a great understanding of market and consumer purchasing and buying patterns."

As for the future?

"I think the heritage of the industry is male dominated. That's changing, but there's a lot of work still to be done; that's why we're strengthening academic programs, to turn out people who are well prepared, and to appeal to students from a variety of backgrounds."

In 2016, 72 percent of the student population at North Carolina State University's College of Textiles was female, compared to just 43 percent in 1998.

And Cassill says women in the industry are strong leaders. "There are several who are truly viewed as strategic thinkers, and I think they're great role models for all of our students."

Amber Brookman is one of those role models. She says women look at the world differently than men and believes that's served her well in her role as CEO of Brookwood Companies Inc., one of America's most technically advanced textile companies and a substantial supplier of diverse woven and nylon products to the United States military.

Brookman manages close to 500 employees between the company's headquarters in New York and its manufacturing operations in Connecticut and Rhode Island. "Textiles are interesting because they take a massive amount of technical knowledge to do them well."

Textiles are interesting because they take a massive amount of technical knowledge to do them well.

Amber Brookman

CEO, Brookwood Companies Inc.

Nevertheless, Brookman admits she sort of fell into the industry. She was a top model who appeared on TV and runways, attended the Academy Awards and even played tennis with Barbra Streisand. Then, at age 30, she decided to go in a different direction. "As far as opportunities for women in the couture industry, you had salesmen and you had showroom girls, and I never wanted to be anyone's girl!"

A referral and a knock-em-dead interview helped her land a fashion director job for a company called Allied Chemicals.

"They made nylon yarn. I didn't know anything about it, but they hired me anyway. I went from being a model to having a secretary and an office, and I wasn't sure what to do with either of them.



Amber Brookman

CEO, Brookwood Companies Inc.

But Allied was a great place to work and financially supported my higher education at New York University."

She became an expert in her field. Within a few years, a customer offered her a new job opportunity, where Brookman would open a division for the design and marketing of sports-related textiles.

"One thing led to another, and I wound up taking control of the entire company. That company was Brookwood.

"We have a unique hiring policy that hires people for what they bring to the table. You have to be smart, nice and work hard. You have to have talent and brains. I don't need good old boys.

"That's a woman's perspective."

She said she has carved out her own niche as a woman running a huge company in the textile industry.

"The fascinating part about being a CEO is that you have to provide the vision that helps the company stay successful through good times and bad — and that is an art, not a science. You have to really care about what happens to the company and put the good of the company and its employees first." ❧



TEXTILES AS ENGINEERED SOLUTIONS

Textiles are the unsung heroes of our everyday lives.

Textiles are the unsung heroes of our everyday lives. Innovative problem-solvers — experts tackling some of the world's biggest challenges to provide comfort, convenience, protection and utility — personify the industry. From aircraft engines to automotive fabrics and athletic wear, American textile industry ingenuity is improving the performance of a wide array of products.

LIGHTER ENGINES

When you think of fibers, you might initially think of natural options like wool or cotton. You might also think of synthetic fibers like polyester or nylon. But what about carbon fiber? Carbon fiber is tightly woven throughout our daily lives but often goes unnoticed except to trained eyes.

A leading carbon fiber manufacturer is Connecticut-based Hexcel Corporation. Beginning with its PAN (polyacrylonitrile) precursor production site in Alabama, Hexcel manufactures carbon fiber with a focus on composite materials that reinforce plastics to help build structures.

“Hexcel is continuing to develop fiber and technology in product forms that meet the needs of those wanting to go faster, stronger and lighter,” said Tom Haulik, sales director of carbon fibers.

Rockets, airplanes and Formula One race cars are just some of the high-tech structures supported by Hexcel's miraculous fiber. Carbon fibers can either be woven into broad goods and then used to reinforce plastics, like in a car panel, or braided and compressed into a tube to form objects like hockey sticks and golf club shafts.

Another amazing application involves the aircraft industry. While most air passengers would assume their seats are made from textiles, they may not realize an engine made from textile parts is propelling them to their destination, thousands of feet in the air. Aircraft engine components using carbon fiber are woven into 3D structures and then infused with resin. These high-strength carbon fibers create a remarkably lightweight, durable and reliable engine that is also fuel efficient.

SAFER LANDINGS

Frequent fliers rely on a powerful engine to take off but need reliable brake discs to make a safe landing. For example, the carbon brake pads that bring your plane to a stop on the runway are created with Pyromex®, a textile from Toho Tenax manufactured in Tennessee. Instead of a metal-based disc, these highly efficient and durable brakes start as a carbon fiber-based felt fabric, which the manufacturing process transforms into a black, brick-shaped brake for aircrafts.

This incredible textile is produced without additional Bromine/haline compounds, making Pyromex® ideal to meet regulatory requirements for flame resistance on one hand and environmental health on the other. The Limiting Oxygen Index (LOI) of Pyromex also is much higher than other organic flame-resistant fibers, making it a durable alternative. Pyromex is widely used in welding blankets, fleece insulation and carbon brake applications to help keep passengers safe.

SMARTER APPAREL

In today's world, our phones double as a personal assistant, personal trainer, grocery list and talking watch. Convenience is king, and smart products are becoming more deeply immersed in our culture and everyday lives. Groundbreaking smart textiles are no exception.

We intuitively know apparel serves many purposes: it shields us from the elements and serves as a form of personal expression. But some clothing is engineered to deliver even more user benefits.

Pulcra Chemicals, a global manufacturer of specialty chemicals for fiber, textiles and leather with U.S. operations in South Carolina, makes sure clothes do more than simply provide function or fashion. The company's Skintex® technology embeds microcapsules filled with high-grade ingredients into fabric during the chemical finishing stage of production. The contents of those microcapsules then are slowly released onto the wearer's skin.

Convenience is king, and smart products are becoming more deeply immersed in our culture and everyday lives. Groundbreaking, smart textiles are no exception.

For example, yoga pants are popular activewear. Yoga pants made with Skintex micro-encapsulated, high-grade lotions and vitamins applied to the fabric provide moisturizing effects throughout the day. Looking forward to a relaxing evening? Pajama pants enhanced with Skintex release a micro-encapsulated aromatherapy with the light scent of lavender to create a calming effect before the start of a hectic week.

Besides making consumer products more luxurious, Pulcra's Skintex line is also having a humanitarian impact.

"The Skintex MRIII blanket is a special, non-woven fabric that we treat with insect repellent," said Troy Massey, Skintex business manager. "This is not your typical, cozy blanket, but a product that is used outdoors. Hunters often use it as ground cover. With the recent Zika outbreak and the ongoing malaria battle in Sub-Saharan Africa, we used our Environmental Protection

Agency-registered Skintex MRIII blankets to make an impact. We donated 11,000 blankets to school children in Tanzania to help fight malaria. We also sent Skintex MRIII blankets to Rio with some U.S. Olympic athletes including members of the swim, taekwondo and water polo teams. We're continuing our efforts to help with this outbreak because it is still a big issue."

MORE VERSATILE, SUSTAINABLE FINISHES

Schoolchildren learn about three states of matter: solid, liquid and gas. But what about the fourth state of matter, plasma?

If energy is applied to a gas, it becomes ionized and goes into an energy-rich plasma state. Plasma is all around us; for example, polar lights in the Arctic and Antarctic skies show plasma in its natural form.

APJeT, a textile technology company located in North Carolina, is using plasma to revolutionize the way fabrics are finished, the point in production when chemicals are applied to improve a fabric's look, performance and feel.

Called the "wet process" because of its water-based nature, the worldwide textile industry uses trillions of gallons of water to finish fabrics each year. Water scarcity and quality degradation are major global concerns, but APJeT's plasma technology is eliminating the need for water in the fabric finishing process. Compared to the wet process, the company's sustainable plasma solution also significantly reduces chemical consumption.

Innovators at APJeT are harnessing the power of plasma to create engineered solutions for a variety of applications:

- Protective fabrics for military ballistics and defense
- Outdoor soil- and water-repellent fabrics
- Non-woven fabrics used in diapers and disposable medical garments
- Automotive fabrics that reduce staining and soiling
- Film membranes that create scratch-resistant surfaces and protective coatings for electronics

"Our process is a complete paradigm shift in how textiles are produced and finished," said President and CEO John Emrich. "Our post-finishing process solution eliminates the need for water, ovens and high energy. This technology allows APJeT to apply durable, performance-enhancing finishes to anything including films, silks, polyesters, cotton and polypropylene, and it's changing the way we think about the finishing process in our industry."

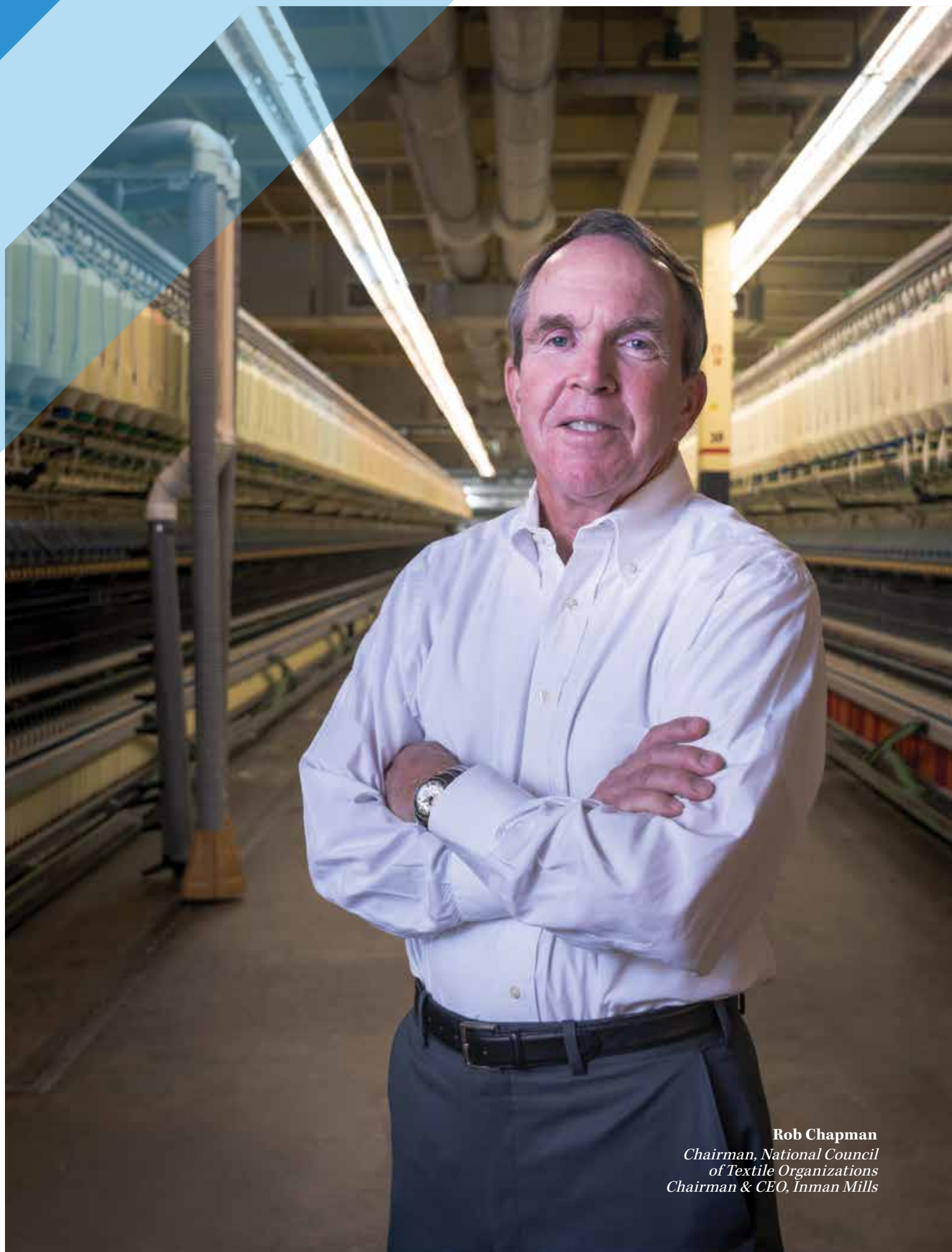
Today, American textiles are transforming countless products from massive aircrafts to needle-thin fibers to create smarter, more durable solutions. By devoting itself to the relentless hunt for engineered solutions and seamless processes, the U.S. textile industry is solving problems worldwide. 🇺🇸

DID YOU KNOW? 16 PRODUCTS MADE FROM TEXTILES

From medical fabric to road bikes, textiles change lives.

- 01 Hurricane-resistant fabrics that hold roofing shingles in place during Category 5 winds
- 02 Aerodynamic, crash-absorbing Formula One racing car passenger cells molded from plastics reinforced with carbon fiber
- 03 An open weave, coated fabric that is the foundation of always useful duct tape
- 04 Special textile overlays in road construction that make roads last 30 percent longer
- 05 Micro-encapsulated insect-repellent treatments applied to humanitarian and outdoor blankets for a bug-free experience
- 06 Medical fabric knit with collagen that, when implanted, helps skin grow over wounds
- 07 Energy-efficient textile fabrics used as permeate carriers in filtration systems in the natural gas, water, food and dairy industries
- 08 Tables and other medical equipment for MRIs and X-rays that are transparent and undetectable to X-ray because they are made from carbon fiber
- 09 Velvet drapes that enhance sound quality, reduce reverberation and help you enjoy that clear sound at the theater
- 10 Carbon fiber woven into a 3D preform and finished with resin to create lighter, more durable aircraft engines
- 11 Lightweight, durable bikes made from carbon fiber and formed with heat and pressure
- 12 Textile concrete fabric that activates and sets when sprayed with water
- 13 35 mm film with velvet to block out light and protect against lint for improved photography
- 14 Flexible fabric innerduct that conforms to the shape of cables placed within, saving significant space over rigid piping during the installation of cables and wires underground or elsewhere
- 15 Specially engineered fiber tape yarns, heat pressured with three polymer layers, that become ballistic protection body armor
- 16 Cell phones, hard disc drives and computers made thinner, stronger and static dissipative from plastics reinforced with short carbon fiber





Rob Chapman
*Chairman, National Council
of Textile Organizations
Chairman & CEO, Inman Mills*

THE LAST STITCH

NCTO Chairman Rob Chapman says the U.S. textile industry has a bright future.

Innovation.

It's a new method, idea or product. It's a strategic stimulus for change. It's a movement that empowers industry breakthroughs and enables people to live better, healthier, more fulfilling lives. And in American textiles, it's the driving force behind an ongoing sea change in what we make and how we make it.

Across the nation, textile companies are continually evolving into more productive, profitable businesses. Substantial investments of capital resources are brightening the landscape of our industry and the American economy.

Today, we're making things that challenge the notion of a textile as simply a fiber, yarn or fabric. American textiles give the world not only comfortable, stylish apparel and beautiful home furnishings, but also other innovative products such as lightweight, durable bicycles for exploring urban and mountain landscapes; bandages with imbedded medicines that help wounds heal; aircraft brakes for more energy-efficient flights; and anti-ballistic protective apparel to shield our soldiers on the field of battle. But as with life, success in the textile business rarely comes easily.

The Chapman family founded Inman Mills in South Carolina in 1901. Today, a fourth generation of Chapmans owns and operates the company, which has navigated an ever-changing and increasingly challenging business landscape. In the early decades of our existence, there was intense but fair competition as literally hundreds of U.S. textile companies vied for market share. Because nearly all of these competitors were American operations, they had to pay similar wages and abide by the same tax code and regulations as we did. The playing field was level, and the best-run businesses won fair and square.

But that changed in the latter half of the past century as foreign competition grew exponentially, especially in Asia. These offshore manufacturers often benefited from production subsidies and tax breaks provided by their governments. They were also willing to pay their workers pennies per hour and bore virtually no regulatory burdens associated with environmental protection and workplace safety.

What followed was the darkest period in the history of the U.S. textile industry, marked by soaring imports, plant closings and the loss of thousands of well-paying manufacturing jobs.

Facing seemingly insurmountable disadvantages, companies like Inman Mills and many others in the domestic textile industry refused to go quietly into the night. American manufacturers fought back with a threefold strategy to save our businesses along with the jobs and communities that are dependent on our industry.

First, U.S. textile producers placed a greater emphasis on product innovation, developing yarns and fabrics for new and varied markets such as those with industrial, technical and military applications.

Innovation, efficiency and quality have allowed our industry to not only survive but to prosper once again.

Second, the industry renewed its commitment to manufacturing efficiency to reduce production costs.

Finally, the U.S. industry committed to remaining an unequalled quality leader, with the goal of providing the best performing, most durable and most technically advanced products in the marketplace.

This combination of innovation, efficiency and quality has allowed our industry to not only survive but to prosper once again. Today, American textiles have experienced double-digit growth in output since mid-2009. The industry is enjoying near record-setting export performance and, most importantly, is providing 580,000 American jobs in our production chain from fiber to finished product.

Despite this amazing rebound, we cannot afford to rest on our recent success. There will always be intense and in some cases unfair competition from abroad. Like all industries, we must adjust to changing consumer demands and deal with inevitable economic downturns. In addition, we need to acknowledge that our workforce is aging, not just at Inman Mills, but industrywide. We're creating jobs, but we need to continue to attract young talent. We need the next generation of chemists, designers, engineers and skilled technicians — professionals who want to help write the next chapter of an industry that is as pioneering as it is fundamental to everyday life.

Certainly, the lessons learned during our past trials will help us address our new challenges. That attitude of resiliency makes me proud to be part of a community that survived because it wasn't afraid of change; that didn't back down from an opportunity to innovate; that stayed true to its roots even as it gave birth to creative and technical solutions beyond our forebears' wildest dreams.

That's the modern, innovative American textile industry of today. 

NCTO
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TEXTILES**
WE MAKE AMAZING

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