

# Fabulous, Functional Fabric

While today's garments can't actually perform your employees' jobs, fabric innovations can greatly improve performance, safety and professionalism in your workforce

**By Tonia Cook Kimbrough**



**R**yan Edison, General Manager of Mecca, an upscale restaurant in San Francisco, works in a high visibility environment, which demands looking fresh and professional despite a higher than average potential for mess. Edison frequently runs between the restaurant floor greeting customers, checking the bar and then back to the kitchen, where splashes and stains are inevitable.

“The kitchen is total chaos,” he says. “People are bumping into each other, oven doors are opening and closing, puddles of water from the dishwasher are forming on the floor, and food is being tossed all around.” You name it, his garments have absorbed it – from red wine to soup to chicken grease.

Recently, however, Edison found a defense. He began wearing Nano-Tex enhanced stain-resistant clothes. “It is easy to wipe off spills and keeps clean – all positive things in this kind of work environment,” he says. As a result, he’s considering the same stain-resistant fibers for his front-of-house staff, who are constantly involved with food spills and stains in a very public environment. “Just like with my job, it’s very important for them to keep their appearance and uniforms looking top notch,” he reasons.

That’s the magic of uniforms made from one of today’s fabulous, functional fabrics. They’re imbued with abilities to handle extreme working conditions while not only appearing professional, but also – in some cases – actually keeping the worker comfortable and calm in challenging situations.

### Awash In choices

A new wave of advancements has washed over the textile industry during the last several years. For those who are not well versed, there’s a danger of drowning in the terminology and applications. However, there are fortunately many useful Web sites and associations available to help sort through the options (*see sidebar, p.55*).

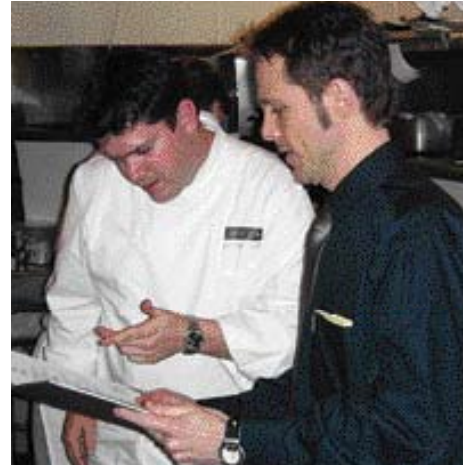
Before you can accurately evaluate the type of performance fabric that’s best for a uniform, you must first understand how these various material “technologies” are adhered. Some are applied or sprayed onto a fabric, for example, as with Teflon or Scotch-Guard. Others are actually integrated into the fabric’s fiber, offering the newest wave of performance enhancement.

Nano-Tex illustrates this method. “Our technology really changes the molecular make-up of the fabric,” says Tom Stenzel, spokesperson for Nano-Tex, a performance technology first introduced six years ago. The process creates what Stenzel describes as “little hooks and whiskers” that permanently bind a treatment to fabric. The technology first entered the market as Resist Spills repellency solution. Nano-Tex scientists were dissatisfied with merely applying a topical coating to fabrics, noting that doing so actually changed the “hand” – the fabric’s drapeability and softness.

The scientists’ response was to actually attach the repelling treatment to the fiber of the fabric at the molecular level – leaving the look and the feel of the fabric the same as if it had been untreated. “It imparts performance characteristics to the fiber in a way that is unnoticeable, permanent and durable,” says Mark Brutton, senior vice president of marketing at Nano-Tex.

Since the original introduction of Resist Spills, Nano-Tex has expanded its line of performance solutions. Today, there’s the dual-action Repels & Releases Stains formula, which not only protects against the absorption of viscous substances, it also allows for

PHOTO COURTESY OF NANO-TEX



Whether he’s in the kitchen or serving drinks at the bar, Restaurant General Manager Ryan Edison always looks good in his Nano-Tex performance apparel.

the easy release of ground-in stains in the wash. There’s also a Resists Static product, which neutralizes static charges to resist that annoying cling. While the fabric isn’t rated for situations such as white rooms, hazardous environments or computer manufacturing, it is a great solution for maintaining comfort and appearance during yucky weather. Imagine the difference this could make for delivery workers, etc., as they cross in and out of cold weather and then into heated buildings, which frequently cause that irritating static electricity.

The Nano-Tex Coolest Comfort brand pulls moisture away from the skin, allowing liquids to evaporate quickly. If this wicking action sounds familiar, it’s because the marketplace is indeed saturated with various performance “brands” that offer cool, dry comfort. Dupont, for example, offers the CoolMax product which has fiber channels that wick moisture away from the wearer’s skin to the outer layer of the fabric. Buyers must carefully evaluate the performance technology they choose by asking questions about how the solution or treatment is adhered to the fabric and what, if any, performance testing the material has undergone.

Brutten recommends comparing ratings given to materials when investing in performance uniforms. Most fabric manufacturers follow highly standardized tests developed by the American Association of Textile Chemists and Colorists (AATCC). For example, the Nano-Tex Resists Spills product follows the formalized test guidelines given by AATCC to determine at what level its solution performs when being sprayed. “Our spray rating was 100, which is the highest you can go,” Brutten says. Using these types of rating systems allows buyers to grade product performance in a consistent way.

Sometimes, your suppliers may each have different trademarked names for the finish that they use on their materials—even if it’s essentially the same base chemical or application in use by others. For example, ERB Industries Inc., offers Pro Dura Stain Release finish, which is its trademarked name for a Scotchguard-like finish. However, each supplier typically has a special application process or other bells and whistles to set their garments apart, so ask for details.

### Map it out

If a single application or treatment of fabric is great, a much more tactical and tailored approach is even better, according to Larry Ramirez, CEO of Dunbrooke. He heralds “body mapping” as the latest technology to change promotional apparel and uniforms. It’s actually a manufacturing process that combines multiple performance technologies and fabrics to create a garment that maximizes moisture management by targeting strategic areas of the body—those “spots” that sweat the most.

“We introduced our first body mapping polo shirt this fall (2006) and it has caused more buzz than any other introduction we’ve made,” Ramirez says. The appeal is the combination of a Reebok-branded Play Dry garment customized for uniform

## Performance glossary

Here are a few terms that can help you evaluate the performance fabrics you consider for your uniforms:

❖ **Hand** describes the way fabric feels. It can be silky, soft, rough, etc. Ask if a topical finishing agent will have any negative effect on the hand of the fabric.

❖ **Repellency** refers to a fabric’s ability to resist water, stains, soils, etc. It does not mean that no water will get into the garment.

❖ **Water-resistant** fabrics, in contrast, are engineered to keep the wearer dry in rain, snow, etc. for a specified length of time. Talk with your uniform supplier about the proper



expectation for the garment you’re considering.

❖ **Waterproof** typically suggests a protective laminate such as Urethane or another micro-porous film has been applied. Manufacturers of waterproof gar-

ments usually take additional measures such as seam-sealing to ensure that water cannot seep through any opening in the garment.

❖ **Wicking** diffuses moisture, pulling it through to the surface of a fabric away from the skin; this keeps the wearer dry.

❖ **Washability** refers to the long-term durability of the garment once it undergoes laundering. Ask if the uniform and its performance technology are safe for industrial washings or dry cleaning, or require home-based washings only.

and promotional event use. Ramirez notes that previously the promotional marketplace typically received more sports-fitting/engineered shirts for re-marketing into the office environment. This didn’t make sense to Dunbrooke, which heard its distributors and clients complaining about the tight fit of these athletic garments. The solution was to take the Reebok technology and quality and work with its designers to design a shirt for uniform and office-wear specs. The result is a looser fitting polo shirt in both men’s and women’s styles and in a wide range of sizes—each sporting the added benefit of Play Dry and body mapping technologies.

### Temperature perfect

A new frontier in uniforms is the concept of customizing specific garments to the challenges of the workplace. While dangerous jobs such as fire fighting and police work

have long been on the forefront of performance enhancements with flame-resistant or bullet-proof fabrications, for example, there are many rugged work environments that also require specialized garments.

Cathy Groves, vice president of marketing at Dri Duck Traders, has witnessed the evolution in her company’s own design and manufacturing facilities. The clothing company first made its name in offering rugged canvas coats for outdoor workmen. Today, it has taken the once rather rough basic and added special finishes that not only enhance strength and durability, but also lend a softer hand to the garment.

“As we progressed, we found that our products were being embraced as the authentic choice for people working out in the field, so we decided to develop another round of high-performance fabrics that would protect those people regardless of

rain, wind, sleet or snow,” Groves explains. The result is the Dri Duck Extreme line (DDX). The original “boulder cloth” jacket takes on the additional protection of a membrane film and then is faced with Teflon. While you can’t see or feel a difference in the fabric, the result is a waterproof garment. Seam sealing offers added insurance against the elements. There’s no change in how the fabric takes embroidery or screen printing, though Groves notes that any holes poked through the fabric during the embroidery process could break the waterproof seal.

RefrigiWear takes on absolute extreme weather and cold environments. Its work wear line begins at a comfort rating of minus 50 degrees Fahrenheit. While the base of the garments are not particularly high-tech, it’s the added features that begin to turn these garments into performance powerhouses. Soil-release and water-repellency treatments add comfort and professionalism to the dirtiest of jobs. More than anything, however, it’s temperature regulation that matters.

“Cold gets very distracting and it’s hard to keep your mind on what you’re doing, so a proper uniform to maintain comfort certainly affects safety,” says Kristy Chriscinkskie, spokesperson for RefrigiWear. Some big-name organizations and companies agree. These specially fabricated garments are worn by road workers for the Colorado Department of Transportation as well as employees at plants

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- LARRY RAMIREZ, DUNBROOKE

and refrigeration warehouses for brands such as Kraft and Fresh Express.

Taking fabrication into the technology realm are companies such as TechniTex, an incubator in technical textiles. The next wave of performance garments will likely incorporate tracking technologies such as RFID wireless tags or built-in cameras. Such devices could be applied to soldiers’ uniforms, the police, park service rangers, etc., to help track and protect them.

#### Look smart

No all workers perform in such extreme conditions or require such high-tech enhancements. However, it’s still imperative for them to look good and feel comfortable. Recognizing the need for this level of uniform, Edwards Garment Company recently introduced a new line of casual work wear called Service Mate, which is treated with textile manufacturer Milliken & Company’s StainSmart repellent. The line of blended twill separates is intended for the corporate executive, salesperson or service employee in industries where soil and wrinkles can be problematic.

StainSmart’s repellent features mean that most liquid and oil-based spills bead up and roll off, preventing the majority of soils from initially staining the fabric. Thicker liquids can be removed by cleaning with a damp cloth.

The finish is applied to the fabric, rather than woven into the fibers. In addition to keeping cloths looking clean, the garments wick away moisture, according to Edwards Director of Marketing Taraynn Lloyd. “It’s perfect for anyone who works in a challenging environment – whether a fast-paced office or delivery driver or even lawn care where sprinkler systems and ground-in dirt are a concern,” she says.

Whatever work environment your employees must face, there is a performance solution that provides a proper fit – from simple stain resistance to ultra-rugged protection. Keep up with the many functional fabric trends in uniforms and you’re sure to have better-performing workers. ♦

*Tonia Cook Kimbrough is a freelance writer for Uniforms based in Florida.*

## Performance Fabric Resources

Intimidated by performance fabric terminology and applications? Don’t despair – turn to these online resources for more knowledge and understanding:

❖ At [www.textileworld.com](http://www.textileworld.com) you can follow the latest news in fibers and finishes.

❖ The American Association of Textile Chemists and Color-

ists (AATCC, [www.aatcc.org](http://www.aatcc.org)) provides not only background information about performance fabric technologies but offers reports on specific functions such as an

assessment of antibacterial finishes on textile materials.

❖ Find guides to an array of fibers at the American Fiber Manufacturers Association web

site, [www.afma.org](http://www.afma.org), which hosts an online tutorial and charts breaking down the trademarks and characteristics of various manufactured fibers.

# Performance fabrics for life

A sneak peek of some of the new breed of performance fabrics



## STAINSMART®

Service Mate twills offer Milliken's StainSmart®, so most spills bead up and roll off.

**Edwards Garment**  
(800) 253-9885

READER SERVICE #188



## EXTREME PROTECTION

Extreme DDX gear is protected by a thin membrane faced with Teflon. Dri-Duck Traders (913) 648-8222

READER SERVICE #189



## X-STATIC®

Silver-coated fibers enhance these products with natural anti-odor, anti-static, antimicrobial and thermodynamic properties. Noble Biomaterials (877) X-STATIC

READER SERVICE #190

## COOL CHEF

This bandana uses DuPont's CoolMax technology – channels in the fiber that wick moisture away from the skin.

**Cool Chef** (770) 926-7944

READER SERVICE #191



## PRODURA

A new line of garments feature ProDura stain release finish.

**ERB Fame**  
(770) 926-7944

READER SERVICE #192



## HOLOFIBER

Holofiber works with the body's own energy system to increase blood oxygen levels – enhancing its ability to build strength, accelerate muscle recovery and regulate body temperature.

**Wickers**  
(800) 648-7024

READER SERVICE #193

