

Out of this world

IFAI Expo Americas presented next-generation technical advances developed for increasingly demanding applications, such as combatting natural disasters, high-performance military protection and the latest in space exploration. **Kathlyn Swantko** reports

With new high-strength polyester membranes designed for the containment of potable water, FR sun-protective mesh fabrics and knitted high performance fabrics for military applications, IFAI Expo Americas 2010 demonstrated a diverse range of applications offering unlimited potential for this thriving sector of the textile industry.

"This year, the speciality fabrics industry's activities are virtually ripped from the headlines," said Steve Warner, president and CEO of Industrial Fabrics Association International (IFAI). "Everywhere we look there are new opportunities for using speciality fabrics, such as temporary structures for disaster relief in Haiti and Chile; and, of course, fabrics used in the emergency oil spill cleanup response in the Gulf [of Mexico]."

"This summer, the world saw the soaring fabric designs of a World Cup soccer stadium, which served as a focal point for the most-watched sport in the world. We're providing high-performing camouflage for soldiers' uniforms; sustainable designs for green

building; and environmental advances using geomembranes in coal ash containment, for example, which is currently being reviewed by the Environmental Protection Agency."

Exhibitors were enthusiastic about the show and the industry's direction, with Marty Oden, vice president of decorative sales at Johnston Textiles, exclaiming: "This show has been phenomenal. It's been way beyond our expectations." Dick Ackaway, sales representative for Texollini, added: "As a new exhibitor at IFAI Expo, we're very happy we participated. It's been a great show."

Warner said that while attendance at the three-day event, which was held in Orlando, Florida, October 27-29, was down slightly from last year, many exhibitors reported making quality contacts. He noted: "By the end of day two, collectively, exhibitors reported a total of about \$600,000 in sales, and received 180 good leads!"

According to Warner, the future holds great opportunities for industrial fabrics. New technologies and recent product developments are moving creativity beyond

the inventor's original intent and inspiring a host of new applications. *Future Materials* reviews several of the new developments that were featured at this year's Expo.

Coated and laminated

Bondcote, a specialist in military shelter fabrics, launched its new OakTree Mesh fabrics, which are made with a lightweight, durable, flame-resistant mesh to provide excellent shade protection from direct sunlight. Although lightweight, OakTree provides an average of 85% sun block, and the proprietary coating system also provides UV, flame and mildew resistance, and is breathable.

Ted Anderson, president and CEO of Bondcote, explained: "OakTree has a minimum service life of two years with no degradation of mission performance and a storage life of five years, with no significant degradation to extreme temperatures, weathering, mildew or petroleum, oil, and lubricants (POL)."

OakTree is available in unlimited colour options, including Infrared Reflectant colours. The fabric is Berry Amendment compliant.

● www.bondcote.com

Seaman Corporation presented the latest versions in its XR-Technology family of products. XR-3 PW is used for the containment of potable water. This high strength polyester membrane is puncture, tear and UV resistant. Whether used for finished water baffles, raw water ponds or other potable water applications, the XR-3 PW geomembrane will retain its flexibility and performance.

Seaman's XR-5PW is specifically engineered for potable water floating cover applications where UV protection is critical. This high-strength polyester membrane is flexible, puncture, tear and UV-resistant. Both XR3 PW and XR5 PW are the only coated fabrics rating a 61 approval for potable water contact by the NSF.

● www.seamancorp.com



Buyers viewed the latest developments at IFAI Expo Americas 2010.

Aerospace and aviation

Kuraray America announced that fabric with Kuraray's Vectran fibre has been chosen for use in Bigelow Aerospace's inflatable module concept. Since payload weight is an important factor in space exploration, one method for reducing the weight and volume is to use inflatable structures, and Vectran's unique combination of properties makes it ideal for these demanding applications. The inflatable walls of the module are composed of several materials including Vectran, which strengthens the craft to resist collisions with space debris. The walls are also designed to be airtight and tough, to withstand the impact of space debris and small meteorites.

Robert Knudsen, manager of sales and marketing for Kuraray, said: "Vectran has almost twice the strength of other synthetic materials, such as Kevlar, and performs better at cold temperatures."

Another new inflatable aviation vehicle using Vectran is the new LEMV (long endurance multi intelligence vehicle), a helium-filled drone that the US hopes to use in Afghanistan by 2012. The skin of the LEMV will be made from a woven blend of Vectran, Kevlar, and Mylar, which will be able to cope with a reasonable amount of small firearms.

● www.kuraray-am.com

Military applications

Apex Mills showcased its new DryRun family of knitted high performance fabrics, which is currently being used by the US Marines, Coast Guard, and soon the US Navy as the fabric of choice for their physical training uniforms. The fabric combines permanent moisture management and antimicrobial properties that deliver up to five times more moisture movement capacity than standard nylon, polyester and other wicking fabrics. The fabric's antimicrobial technology boasts an efficacy of 3.0 log reduction for staphylococcus aureus and klebsiella pneumoniae.

● www.apexmills.com

Texollini launched its new APT (Advance Performance Textiles) at the show. This family of knitted fabrics is used not only for military applications, but also has applications in medical and athletic end-uses. Besides the basic moisture management, water repellency and antimicrobial qualities, the collection can incorporate such properties as FR in tri blends for military applications and aloe/vitamin E yarns for medical uses. The line is available in a variety of constructions including fleeces, meshes,



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and jerseys. In addition, Texollini has dyeing and printing capabilities in-house.

● www.texollini.com

TechFiber promoted its Flex family of trademarked products at IFAI Expo. The company's Flex-Technology is a patented manufacturing process utilising high-performance thermoplastic polymer film to bond the fibre material into a resilient fabric that offers impact and ballistic resistance. From design and prototyping to engineering analysis, simulation and testing, the Tech Fiber team of scientists and engineers are continuously improving Flex-Tech's performance, tailoring the materials to solve the most challenging product needs for personal protection, structural, and impact applications.

Jack Lester, general manager for TechFiber noted: "Going forward into the first quarter of 2011, Tech Fiber will be rolling out a new line of directional and cross-directional material, focusing on such commercial uses for the industrial and sporting goods (i.e hockey sticks, goalie equipment, etc.) markets, besides military and law enforcement."

● www.techfiber.com

Outdoor Fabrics

Johnston Textiles launched its new Hi-UV Polyester finished warp weave Oceanic Marine fabric at the show. Available in 8 oz. or 9-3/4oz., 60 inches wide, the fabric comes in 17 stock colours and can be customised to 130 inches wide.

Going forward, the company will be introducing its new line of vertically

produced and finished solution-dyed acrylic fabrics for the awning and cushion markets in early 2011.

● www.johnstontextiles.com

Bainbridge International showcased its woven sailcloth and laminates for the sail-making industry. The Bainbridge line includes everything a sail-maker needs to make a sail from its hi-tech DIAX laminates and AIRX spinnaker fabrics, to all the necessary sail hardware. In 2011, the company will be offering wider aspect cloth for wider sails, and a new range of warp-oriented carbon base laminates.

● www.bainbridgeint.com

Equipment

Eastman displayed its complete line of manufacturing fabric-cutting equipment at IFAI Expo. Eastman offers the industry's widest range of classic, hand-held and manually-operated fabric cutting machines; as well as a comprehensive line of fully automated, computerised cutting and plotting systems. The company's newest line is its automated cutting tools and equipment used for composite materials.

Elizabeth McGruder, marketing manager, explained: "The pattern can be entered into the machine from a drawing. It is then expressed to the conveyor system, which automates the cutting process. The operation extends the accuracy and minimises waste, which ultimately increases productivity and efficiency for the end-user."

● www.eastmancuts.com

● www.ifai.com