

Buyers visiting this winter's trade fairs must have felt like children in a candy store as they were treated to a feast of new products and developments across the spectrum of yarns and fibres, fabrics, laminates, apparel, footwear and protective gear. From ispo in Germany through Première Vision Pluriel, Texworld and Interfilère in France to the SIA Snowsports trade show in Las Vegas—to name but a few—there was something for everyone.

Showtime: Winter wonderland

Numerous fibre producers unveiled new products at the shows. Italy-based RadiciFibres Fashion&Interiors presented its new bacteriostatic yarn line Radilon Bacteriostatic SingleSix Dtex 78F68 textured yarns with Sanitized Silver at Expofil, which are said to be particularly well-suited for the hosiery and circular knitting sector. Available in semi-dull and full-dull lustres, the yarn has permanent bacteriostatic properties thanks to the incorporation of Sanitized silver nanoparticles in the PA6 matrix before spinning, which prevent the proliferation of bacteria and the build up of unpleasant odours in garments—even if washed frequently. Furthermore, because of its PA6 polymer matrix, it will not yellow, takes up dyes exceptionally well and offers excellent workability which results in garments that offer comfort, breathability, and maximum hygiene.

As featured in the January/February issue of WSA, Optimer Performance Fibers highlighted its new Dri-Release 'FR' (flame resistant) version of its patented, intimate blend of hydrophobic (water repelling) and hydrophilic (water accepting) Dri-Release technology at ispo. Developed in collaboration with Safety Systems, and marketed under the Dri-Fire name in its hybrid performance garments, it is self extinguishing, quickly turns to ash and does not melt or drip. It also delivers accelerated high performance moisture management yet feels soft like a natural fibre against the skin.

Israel-based manufacturer of nylon 6.6 Nilit officially launched its new moisture wicking yarn Sensil Aquarius at ispo and Expofil. With 'micro-channels', the new yarns are said to carry moisture away from the body through capillary-like structures that are formed by the

Falke has incorporated Outlast Adaptive Comfort technology into its latest seamless underwear.



bundle of filaments.

Elastane brand creora, developed by Korean company Hyosung Corporation, showcased its latest developments for sports and fitness. Focusing on the recent trend towards more 'natural' fibres, the company highlighted H-450 in its Core Being range which offers added comfort and support to sport fabrics with both natural fibres, such as soya, wood and bamboo, and man-made fibres such as Modal. It also showcased C-400, which is suited for blends with natural fibres in seamless garments.

In the Performance Pace category, creora presented H-350 which provides stretch, improved wash fastness and quick drying benefits, seamless garments with zonal power stretch and soft micromesh inserts using C400, and fabrics combining creora and Hyosung's Aerosilver which offer stretch with permanent moisture control and anti-bacterial performance.

In its Pleasure Factor range, the company blended H-350 with high-tech synthetics to offer lightness, comfort, quick drying and wash-fastness, H-100D for intense blacks and heather effects, and C-400 for seamless garments. Further performance benefits added with Hyosung's Askin for UV protection, and windproof softness were also presented.

In the Extreme sport trend, creora showcased its H-350 blended with Aerocool, Askin and Aerosilver from Hyosung for improved wash fastness and quick drying.

Italian producer of circular knit fabric for swimwear, underwear, outerwear, fashion and sportswear Maglificio Ripa presented new 'intelligent' fabrics at Interfilière and ispo. The fabrics, made of carbon filaments mixed with nylon or polyester with elastomers, are designed for comfort and high performance. The company claims that use of the new fabrics prevents circulation disorders caused by electric charges that settle in the body as the anti-static and conductive properties are said to favour blood circulation, cellular oxygenation, contrasting muscle contraction and accelerating humidity evaporation.

A material world

In terms of fabrics, softshells remain a strong favourite and Swiss high tech textile developer Schoeller presented over 100 different softshell fabrics and individual finishing technologies at ispo. Designed to meet the varied needs of individuals participating in different activities it presented a wide range of fabrics using technologies such as its c_change membrane, schoeller-PCM, NanoSphere, and 3XDRY.

Outdoor brand Salomon showcased its new apparel collection with advantex one softshells for autumn/winter 2007. Developed after four years of research by Bluestar Silicones, advantex



Salomon showcased its new soft shells with advantex one.



one is a lightweight water breathable fabric based on patented water repellency grafted silicone technology at the core of its fibres, which is said to provide ultra-durable water repellent (uDWR) performance, keeping garments dry by preventing water from soaking into the outer fabric layer. A new development, advantex Move, will also feature in Salomon's fall/winter 2007 Aero, Deemax and Evo softshell jackets and pants. This innovation offers uDWR, weather protection, stretch, and breathability to provide comfort and durability.

With its new Trek & Trail collection Vaude combined performance with fashion to produce winter apparel and backpacks that can be used on the way to work, shopping or on a winter hike without compromising on comfort or weather protection. Using outdoor materials such as Ceplex 10,000, windproof softshells, down and fleece, the collection offers new looks and designs that are said to meet the highest demands in weather protection and insulation.

Italian producer of fabrics for swimwear, activewear and intimates Carvico participated at ispo for the first time in February, showcasing innovations such as its Revolutionary fabric, which is said to be a milestone in terms of its lightness and structure, which is well-suited for sports, fitness, and leisure garments. It is also extremely strong, ensuring freedom of movement and maximum muscular compression, ultra flat at less than 50% of the thickness of classic charmeuse, and super light at just 160g per square metre. Furthermore, it stretches the same amount in both width and length, has a pilling resistance value equal 5, is highly chlorine resistant when combined with Xtra-Life Lycra,

and quick drying. Carvico also exhibited with polyurethane tape specialists Framis Italia, who together have succeeded in combining Carvico's Vuelta and Atlanta fabrics with Framis' NoSo technology to completely construct and decorate a cross country skiing one-piece suit and an athletic top with leggings, heatwelding the seams and the laser-cut zips to create aerodynamic outfits to provide both warmth and speed. Framis also focused on footwear at Mod'Amont in Paris, promoting its collaboration with Salomon, through which they developed a new outdoor sports shoe, Fusion Dry, which is joined, reinforced and decorated using NoSo technology.

Moving seamlessly

Moisture management is vital in winter sports due to the combination of high activity and cold climates. Sweden-based Craft presented a highly functional, lightweight base layer range for winter 2007/08, designed specifically for highly aerobic activities on cold winter days. The Pro Warm base layers use very lightweight hollow polyamide fibres, polyester and elastane in a complex 3D-knit with seamlessly integrated climate zones. While the hollow fibres and spaces in between trap air, thus providing insulation, the climate zones are said to guarantee excellent temperature management, keeping the body warm where it is needed, yet preventing overheating. It is also said to be supersoft, providing a high level of moisture management, good fit and freedom of movement.

Said to be the first intelligent seamless functional underwear with Outlast Adaptive Comfort technology, Germany-based Falke added two new lines to its Ergonomic Sports Underwear collection for autumn/winter 2007/08.

Athletic Warm and Comfort Warm with Outlast Adaptive Comfort based on phase change materials (PCMs) regulate temperature and provide a balanced body climate, thereby ensuring comfort.

Latest laminates

In terms of laminates, several of the big names came up with brand new developments. Germany's Sympatex Technologies highlighted its new Weblite, a 2.5-layer laminate which is said to be ultra-light, extremely hard-wearing, heat-insulating and highly flexible, completely windproof, waterproof and extremely breathable, as well as guaranteeing freedom of movement.

The company also presented Airflow for footwear, which is a special 3-D mesh laminate which harnesses the ventilation effect generated by the motion of walking. The rolling of the foot during walking causes warm air to be pressed



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 Craft

out of the shoe both horizontally and vertically toward the shoe's collar, resulting in optimum air exchange and greater wearing comfort.

Sympatex also won the 2007 ispo European Ski Award in the textile category with its recent development Reflexion III, a high-tech membrane with optimised heat management which is said to provide extremely efficient insulation in cold temperatures, while also offering breathability in a light weight form. The compact hydrophilic membrane is thinner, lighter and more flexible (300% bi-stretch) than other membrane systems as well as being completely waterproof, windproof and recyclable. The nonporous surface is plasma treated and aluminised in a 4,000°C vacuum environment using a patented process that allows it to be coated with an extremely thin, 50-nanometer layer of aluminium. The laminate can then be sewn, seam-sealed or bonded.

W.L. Gore showcased its latest development, the three-layer Gore-Tex Pro Shell featuring new Gore Micro Grid Backer technology, a lining based on a new type of weave that is said to be extremely breathable, abrasion resistant and lightweight. The combination of materials is said to provide a lighter weight laminate with improved abrasion resistance, and enhanced breathability and comfort, developed specifically for sports activities such as mountaineering, rock climbing, ice climbing, ski mountaineering, and expeditions.

The new backer material combined with extremely thin seam sealing tape means these jackets are more than 60g lighter than previous Gore-Tex garments, whilst the Micro Grid Backer technology has been specifically engineered to provide superior comfort on the

inside through a smoother, more supple finish.

Gore also showcased its latest development for mountaineering skiing boots, initially implemented by Italy's Scarpa, which combines a plastic shell and an actively breathable inner shoe lined with a Gore-Tex laminate that transports perspiration away from the foot.

French sporting goods company Lafuma has incorporated Italian-based Nextec's patented OutDry technology in its footwear range for winter 2007/08. The benefits of the technology include a new construction using a lamination process directly applied to the upper of the shoe, as well as waterproofness, breathability, greater comfort, and lighter weight. OutDry is said to create more air space between the foot and the waterproof barrier, thus reducing condensation caused by perspiration. It also maintains a constant temperature without having to incorporate seams which can cause friction.

Making an impact

Impact protection is becoming more and more relevant in winter sports as skiers and snowboarders become increasingly adventurous. US technical skiwear company Spyder showcased its most advanced collection. In its men's collection Spyder's leather Racer Glove incorporates d3o Intelligent Molecules which lock together on impact to provide protection against collisions, but immediately revert back to a pliable material once the pressure is lifted.

In addition to the d3o protection for fingers, wrists and the backs of the hand, a Gore-Tex HP waterproof breathable insert and PrimaLoft insulation keep hands warm and dry to protect against heat loss and the loss of dexterity.

New to Spyder's Quest collection, the Avenger Jacket and Pant incorporates stretch twill material which moves with the body to provide a range of motion and comfort, and a waterproof 20,000mm Dermizax membrane from Toray, a Spylon water repellent finish and external seam taping to keep the wearer protected from the elements.

Meanwhile, Spyder has also expanded its seamless base layer offering to include X-static silver fibre technology. The products are constructed to include support points, zonal venting and ergonomic fit, whilst the seamless design eliminates chaffing because there are no friction spots, thus providing more comfort and performance. Moreover, the silver-based X-static anti-microbial fibres provide anti-odour, anti-static, and thermal conductive properties.

Swiss sports apparel maker Marmot launched a new protective ski vest at ispo, featuring Dow Corning's Active Protection System—a 'smart' impact protection textile. The Nirvana protection vest incorporates Dow Corning's patented fabric, treated with a specially formulated silicone coating, which remains soft and flexible under normal conditions, but becomes instantly rigid when struck by high-impact force, thus protecting the wearer from injury. Once the impact is over, the material immediately becomes flexible again.

Furthermore, the material is breathable and flexible for comfort and freedom of movement, it can be stitched directly into garments, eliminating the need to insert and remove components, it is less bulky than hard armour, allowing for many design possibilities, and it can be layered, so the garment can be customised to provide increased levels of protection for specific areas.

