

Skin care and endurance-enhancing clothing are part of a high-tech revamp at French clothing brand Damart.

A classic upgraded

In Roubaix, France, in 1953, Damart launched Thermolactyl thermal underwear, which may well have been the world's first branded functional baselayer. Granted, the sports industry term would not have been used to describe the product at that time. Yet 60 years on, it has blossomed into a major market for many performance sportswear brands. It could even be said that the trend has come full circle, back to the high street, by way of Uniqlo's HeatTech thermal underwear. The Japanese fast fashion retailer is now a big player in the category having sold some 130 million units in 2012.

In its original version, Thermolactyl owed its thermal properties to chlorofibre, a triboelectric fibre produced by Rhovyl, a company also based in the north of France, and now one of the world's last producers of the PVC-based synthetic.

With the launch of Thermolactyl Sensitive this autumn, Damart hopes to regain its position as an innovative provider of functional underwear. The new addition utilises a combination of fibres to offer not only thermal insulation but also to help the skin maintain a high level of moisturisation. Damart believes that wearer discomfort is often due to skin dryness, a condition that would be more acute in the cold season.

The new range relies neither on a chemical finish nor on microcapsules to achieve this, but rather on a blend of four different fibres. These include Emana (an FIR-reflecting polyamide fibre developed by Rhodia Brasil, which makes up 40% of the material's composition), an acrylic microfibre, a polyacrylate fibre and Lycra. "Thermolactyl Sensitive creates a micro-environment that protects the skin's natural hydric [moisture] barrier and avoids dryness in the outer layers of the derma," says Michel Caillibotte, Damart's head of research and development. The moisture regulating function is said to be due to the presence of the polyacrylate fibre. Wearer tests, conducted by French cosmetic testing lab DermScan have shown that skin hydration increases by 21% after four hours of wearing, roughly half the level a wearer would have just after applying a moisturising lotion.

The Body Gain running kit, made with Emana and Lycra, is said to activate blood flow, reduce fatigue and delay the onset of muscle soreness.

 Damart





The new Thermolactyl Sensitive combines four different fibres: a FIR-reflecting polyamide, acrylic, polyacrylate and Lycra. The polyacrylate component is said to help the skin protect its moisture barrier.

 Damart

The company's team of textile engineers has been investigating the interaction between textiles and the skin, seeking to better understand how skin hydration affects wearer comfort. The company did not want to apply any chemical additive that would wash out over time. "We tested many fibres and excluded all the ones that felt itchy or dry on the skin," says Mr Caillibotte.

The ceramic advantage

In addition to the new range of skin-friendly thermal underwear, Damart is also introducing a running and fitness kit, Body Gain, designed to boost endurance. Rhodia's ceramic-enhanced polyamide Emana is present here again, chosen for its ability to boost blood flow, and is paired with Lycra to provide muscle compression. The fabric used is manufactured by Liebaert, a Belgian knitter. Damart believes it is the first to combine FIR with compression, which may be true if one considers that the clothing company targets mainstream consumers more than elite athletes. A few years back, French skiwear brand Rossignol introduced Infiniti, a range of cross-country skiing clothing made with high-stretch Lycra Sport fibres in a knit fabric that also contained a ceramic-enriched polyamide.

"The innovation in Body Gain is based on the combination of ceramic micro-crystals embedded in a polyamide yarn, which reflects

far infrared radiation, and elastic compression. This blend increases oxygen levels in muscles thanks to improved blood flow, which then leads to the reduction of cramp by 60%," says Cécile Lecland, a textile engineer at Damart.

Ceramic infrared-reflecting textiles are also being introduced in the company's outerwear as a lining fabric. "This makes it possible to reduce the weight of the thermal insulation by half while offering the same level of warmth," says Mr Caillibotte. These innovative developments are part of a move by Damart to modernise its image. The sports clothing was first launched in 2006 and is now distributed by 165 sports retailers. Consolidated sales at Damartex, the name of the holding company, reached €696 million in 2015.

The drive to boost innovation does not stop there, as Damart is a member of a new research programme on electrotiles and connected clothing that is partly funded by the French state.

One of several advanced textile research programmes, the Textronic consortium that the company has joined is headed by French start-up BioSerenity, a company working on a smart shirt designed to better diagnose epilepsy. Other members include children's wear brand Petit Bateau, compression specialist Innothera, a maker of electronic components (EMKA) and the French Textile Institute IFTH. By working together, the companies intend to pool their resources to develop a series of products for each company's specific end market. Ultimately, it is also about economics, says Mr Caillibotte who sees collaboration as a way to enable scaling up to make costs go down.

"There are many challenges in the smart clothing category, but two of the most critical ones are the highly fragmented nature of the textile industry and the need to bring together companies specialising in textiles, electronics and software that don't speak the same language and are not used to working together," he says. This is a challenge that many companies investing in smart clothing face, as we reported in WSA's May-June issue. Before a smart shirt becomes a reality, Damart seems to be betting on ceramic-enhanced materials to establish Thermolactyl, and its expanding sports performance clothing, firmly in the twenty-first century. 

Designer collective Andrea Crews has updated the styles of Damart's classic Thermolactyl, part of move to revamp the company's image.

 Damart

