Italian textile group Miroglio has become the first company to test a printing system that reduces water usage fiftyfold and cuts CO_2 emissions by 90%. It claims the print cycle has been "completely revolutionised".

Liquid assets

Miroglio says it isn't a company that merely pays lip service to sustainability. The Italian textile group has become the first to trial a waterless printing system for which it has an exclusive licence for six months. US-based Sensient supplied the inks and together with a new printing system from Italy's MS Printing Solutions the company claims it can achieve a 90% reduction in CO_2 emissions and a 57% reduction in energy usage. More impressive, it says while standard printing uses 50 litres of water to print one linear metre of fabric, the system cuts this to less than one litre.

"In textiles, there has been a lot of talk about ecofriendliness and sustainability. But when you go to measure the impact, you realise a lot of people are just claiming they are sustainable – we can actually prove this works and it's reliable," says Mauro Davico, Miroglio's communications director.

The majority of Miroglio's business revolves around printing textiles, but it also runs a yarn spinning factory in Tunisia. In Italy, it has a large textile printing plant in Govone and a paper-based printing division, Sublitex, which produces around 25 million metres of paper and film every year. Based in Alba, in the north-west of Italy, its 20,000m² facility performs a range of processes and it is here the waterless system is in place.

Sublitex director Paolo Gramaglia explains, "Sensient is a company that invests heavily in research and development (R&D) and is oriented towards sustainable innovation, which is also an important area for our group. It is the supplier with whom Sublitex developed digital printing, so it was a natural consequence to continue the development with them into the world of direct printing on to PES [polyester]."

Miroglio's collaboration with international artists was presented at a Metri D'Arte event in Beijing.

Miroglio

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Paolo Gramaglia, director of the Miroglio Group's Fabrics and Sublitex business units.
Miroglio

Temperature controlled

As one of the largest fashion groups in Italy, producing prints and textiles for a range of companies, it was imperative the performance was the same as with the conventional process, which is why the system took a year to test. "The colour match with older dyestuffs is very good, but our new collections are launched with such speed that it was easy to bring to life new designs and patterns using technology starting from spring-summer 2014 without creating any problems in production," adds Mr Gramaglia.

Mr Davico says the company did not lose sight of the customer, and as the total printing costs did not increase, no charge was passed on. "We had been asked to look at this innovation to help create a more sustainable world, but the big challenge is not to market something that is just sustainable, but to do it for the same price as the existing products. That's the key challenge, and all the big retailers are working on it – M&S, Zara, brands in Asia – our customers don't want to only buy sustainability from us, they want to buy fashion, quality, price; and then sustainability."

Holistic approach

The waterless inks are part of a larger project Miroglio has spent the last three years working on. 'E.Volution' is a three-pronged strategy: the first is innovation and technology, which encompasses the new digital printers. The continuous single-pass MS laRio is 30 metres long and built in nearby Como. "Colours and designs are hyper clean, there are no limits to creativity and product personalisation is taken to new limits," says the company.

The second strand is social and eco responsibility, which includes the Sensient inks. The third element is creativity. "We decided to invest in fashion and textiles working together, selecting international artists to come into the company to work with our designers," says Mr Davico.

The initiative, Metri d'Arte, was launched in Paris and the company has since taken it to China, to add input from its Chinese team, and provide a "cross-contamination" resulting in new ways of thinking.

Global reach

There are a number of other companies looking into or using waterless print systems. Taiwanese textile company HKTDC says its system uses 95% less water and cuts CO_2 emissions by 40%. It uses what it says is the first machine of its kind in Asia, developed by Japanese companies including Toshin Kogyo Co, Mitsubishi and Tokai Senko.

US-based Fabochrome claims it is the first company to establish sustainable fabric print production in the States. It uses high-resolution, wide-format digital textile printers, with a waterless printing process that eliminates the discharge of dyes and pretreatment chemicals into waste streams. A number of Chinese companies have also patented their waterless print technologies.

Miroglio's work with Sensient is set to continue with a new family of eco-friendly dyes for other sectors in development, and an increasingly strong collaboration between their R&D divisions. The Italian group is also investing heavily, alongside its suppliers, into exploring the possibility of expanding its water-free processes. It is setting up a joint research project with the chemistry department of Italy's University of Torino to explore what it describes as a "revolutionary new technology".

"This is fully in line with the sustainability plans of Miroglio," concludes Mr Gramaglia. "It's the first step on a road that has no U-turns."

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