



WORLD WIDE WEAVE

The fine art of nonwoven composites

Mondi Ascania revs up production with an innovative laydown belt

The development of nonwovens for hygiene and medical products is a demanding business. Customers want lower and lower grammage, more and more functions and comfort – and all that, of course, without any compromises in terms of maximum cost-efficiency and sustainability issues. Mondi Ascania meets these challenges with made-to-measure nonwoven composites and innovative production processes. The company, which is headquartered in Aschersleben, Germany, maintains its high standard of quality through continuous investment in state-of-the-art technology. One of its latest acquisitions is the novel CONDUCTIVE[®] 7690 laydown belt made by GKD – GEBR. KUFFERATH AG for its SPC line. Thanks to the belt's strong grip effect in the laydown zone, production could be resumed immediately after the belt was changed, i.e. without the downtime for preparation and the subsequent start-up waste usually encountered with conventional belt types. In this way, and also through its significantly more favourable cleaning properties, the GKD laydown belt increases the overall efficiency of this highly demanding production process.

In nonwovens manufacturing, time is money. Shorter and shorter product and development cycles are faced with growing markets in the hygiene and medical sectors. As a leading producer of special nonwovens for hygiene, medical, cleaning and cosmetic products as well as special applications in the industrial sector, Mondi Ascania regularly sets standards with new product concepts. In particular for baby and infant care, feminine hygiene, incontinence and a range of medicine and hygiene cleaning products, its



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high-performance nonwoven products are in high demand. Thanks to their application-specific designs, the company's textile fabrics, which are made of a wide range of materials, fulfil extremely complex requirements in terms of fluids management, look and feel, elasticity and resistance to tearing. "In European markets, growth is particularly strong in the demand for incontinence products for adults," says Ueli Steiner, Managing Director of Mondi Ascania. And he adds, "In the medical sector there is also an evident increase here in demand for disposable products like disinfection wipes and other medical supplies." But the classic growth markets of Asia, Africa and Latin America are also very important for his company. And through its affiliation with the internationally operating Mondi Group, the company is optimally equipped with a global network through which to pursue its business interests. Founded around 20 years ago in Aschersleben in Germany's Sachsen-Anhalt, Mondi Ascania's clientele encompasses numerous globally operating players as well as family-owned businesses specialising in niche products.

A major factor in the success of the company's composite nonwovens is the vertically integrated production of PP staple fibres, thanks to which Mondi Ascania can generate fibres with the specifically required characteristics and process them with a range of other fibres. On the SPC (Spunlaid-Pulp-Carded) line, a combination of procedures manufactures the sophisticated composite nonwovens from polymers, pulp and fibres. A special feature of the line is the high proportion of renewable materials used. In contrast to conventional spunlaced products, Mondi Ascania uses pulp directly instead of viscose as the absorbent material. The materials, prepared in several stages, are firmly bonded together by means of hydro-entanglement and, on request, embossed with the customer's name. Depending on the particular application, the customer can also request embossing by means of thermo-



calendering. The final stage of the process is packaging according to order in rolls or, in the case of thicker material, in reels.

Virtuoso interplay

With the SPC line, the sheer complexity of the factors – type and interaction of the materials used, diversity of technologies and versatility of the options – is the key to success. "Managing the interplay of components, settings and procedures is a fine art," says Mark Lampe, the production manager in charge of the SPC line. No wonder, then, that process reliability and line availability are the absolute prerequisite for the achievement of the necessary production efficiency and product quality. For this reason, one of Mondi Ascania's prime requirements was a laydown belt that, after a belt change, would immediately run at full production speed. With the smooth surfaces of conventional belts, initial imperfections in the nonwovens always occurred after a belt change during laydown of the filaments. So, after installation but before being put into operation, the contact surfaces of the belts had to be mechanically roughened in time-consuming manual work. It took about twelve hours for the belts to be made ready for production. And even then it was a while longer until they were optimally run-in. "These are costs that really make a noticeable difference," says Managing Director Ueli Steiner. And Mark Lampe adds, "The belt is involved in the first stage of production. Every imperfection that occurs here multiplies itself in the course of the rest of the process." The belt structure has a strong influence on the consistency of the filament distribution in the web and thus on the overall look of the product. Irregularities or thin spots in one layer of the material make it impossible to fulfil customer specifications like tear resistance or air permeability. "Our customers are very demanding when it comes to product specifications," says Ueli Steiner. "Every part of the line is crucial in ensuring that these specifications are consistently fulfilled within very tight tolerances."



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"Unique on the market"

Mondi Ascania had therefore been looking for quite some time for a belt that would provide full performance from the very start. At the INDEX 2014, they discussed the matter with GKD, a company well-known in the trade for its expertise in the manufacture of specialised process belts for nonwovens production. Several months later, the Düren-based mesh specialists presented their innovative laydown belt CONDUCTIVE 7690 at Mondi Ascania's premises in Aschersleben. In close collaboration between the two companies, the belt was custom configured precisely to the needs of the complex application. "GKD really went to a great deal of trouble for us. They didn't just want to sell us a belt; they wanted to convince us. There aren't many manufacturers who would do that," Ueli Steiner recalls. Six months after the order, the 30.5 metre long and 4.5 metre wide endless belt was installed. Its novel construction is what gives the belt its particular grip. The significantly rougher belt structure in the running direction ensures a high traction effect in the laydown zone and, at the same time, optimal web doffing, as Mark Lampe confirms. "We were already totally thrilled by the starting process," he recalls. "The start-up behaviour of the belts previously used was usually problematic. But the GKD belt was completely different. We started it up, and it ran well immediately." After a short so-called "disaster check" – the belt was started up cautiously and, for a short time, a bit of material was rolled in until it could be passed on to the next machine – the machine was turned up to full production speed. "In our experience, the GKD belt is truly unique," says the Production Manager in praise. Since it was put into operation, Mondi Ascania has been able to produce on the SPC line without interruption, and to run the belt in nonstop operation. And there hasn't been any trouble with the subsequent detachment of the web from the belt, either. Another aspect of the GKD belt that, according to feedback from the shifts, is better than the belts previously used is its ease of cleaning. Spitters are definitely faster and easier to remove. "The only question still to



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be answered is the life cycle of the belt," says Mark Lampe. During the production process, the laydown belt is subjected to great stress in the form of heat, tension and mechanical strains, which make regular belt changes a fact of life. But Mondi Ascania is not too worried about this problem, either. "So far, we've been very positively impressed by the collaboration," says Ueli Steiner, summing up their opinion. And, encouraged by this positive experience, the company is now also having talks with GKD about a filter for their polymer filtration.

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GKD – GEBR. KUFFERATH AG

The owner-run technical weaver GKD – GEBR. KUFFERATH AG is the global market leader for metal and plastic woven solutions as well as transparent media facades. Under the umbrella of GKD – WORLD WIDE WEAVE the company combines three independent business units: SOLID WEAVE (industrial meshes), WEAVE IN MOTION (process belt meshes) and CREATIVE WEAVE (architectural meshes). With its six plants – including the headquarters in Germany and other facilities in the US, South Africa, China, India and Chile – as well as its branches in France, Great Britain, Spain, Dubai, Qatar and worldwide representatives, GKD is never far from its customers.

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