

First, fast, and flexible in tissue

Just weeks after the introduction of the PrimeLineCOMPACT concept, Papierfabrik Albert Friedrich KG (Fripa) ordered the first unit – continuing its strategy of investing in ultra-modern production lines to meet changing customer requirements. The COMPACT machine was delivered in combination with Andritz stock preparation systems, which saved Fripa time and money.

“Changing consumer requirements can be reached more efficiently with flexible, middle-sized machines, like the COMPACT design.”

Andreas Noack, Managing Director of Fripa (left) shakes hands with Günther Offenbacher, Senior Manager Sales for tissue systems from Andritz.



In March 2008, Fripa started up the first Andritz PrimeLineCOMPACT – a complete tissue-making line from stock preparation to the parent roll, including automation. Located in Miltenberg, in the heart of Germany, the fast-moving Fripa stays ahead of its competition by investing in ultra-modern converting lines and packaging systems to give it extreme flexibility.

Fripa’s investment goal, according to Managing Director Andreas Noack, was to install a new line capable of producing approximately 100 t/d of high-quality tissue that was easy to install, easy to start-up, easy to operate, and easy to maintain.

“The tissue industry is a dynamic business,” says Noack. “Changing consumer habits have a more direct influence on tissue than on other paper grades. This means that the technologies we employ must be flexible to meet these changing requirements. These requirements can be reached more efficiently with flexible, middle-sized machines, like the COMPACT design.”

First installation based on trust

“In 1996, Andritz rebuilt our PM 5 and did a very good job,” says Andreas Liebich, Division Manager Paper Production. “The cooperation was very good and they proved their technical competence to us. They also have excellent references for delivering tissue machines with good price-performance ratios. Based upon this trust, we did not feel there would be extra risk to install the first PrimeLineCOMPACT line.”

“Even in business, there is an emotional side,” Noack says. “Business is a matter of trust. You don’t build trust

with a company, but with people. We have a good, stable relationship with Andritz people that has been proven over the years. Our Andritz contacts on the technical side and the commercial side have been excellent. This is important for us as a medium-sized business.”

COMPACT, but full-featured

“Each component in the PrimeLine family has unique strengths and innovations,” says Günther Offenbacher, Andritz’s Senior Manager Sales for tissue systems. “The COMPACT production line is no exception.”

The idea behind COMPACT is to combine cost efficiency with proven quality. A special project team made up of Andritz process experts, engineers, manufacturing specialists, customers, and industry designers was created to arrive at the final design. The key to COMPACT’s cost efficiency is the level of standardization – which reduces engineering hours, manufacturing hours, installation time, and even transport costs.

“Single modules can be shipped in standard containers, with the exception of the Yankee,” Offenbacher says. “

The components are combined in standard arrangements to achieve the speed and production capacity required by each customer. In Fripa’s case, the new PM6 is configured for 30,000 t/a production and a machine speed up to 2000 m/min. The paper width is 2.75 m.

The stock preparation system is an Andritz ShortFlow™ design and is sized for 120 bdt/d of bleached virgin pulps. The FibreSolve™ pulper with two conveying lines is a combined solution for hardwood and softwood fibres. The hardwood line (60 bdt/d) consists of a protection screen, a deflaker and a TwinFlo™ refiner. The softwood line (60 bdt/d) is very similar but with two refiners.

In addition to stock preparation, Andritz also delivered equipment for the broke line (20 bdt/d capacity) and the systems for water recirculation and fiber recovery.



▼▲ The PrimeLineCOMPACT machine (PM6) at Fripa is configured for 30,000 t/a production with a machine speed up to 2000 m/min. The paper width is 2.75 m.



“Minimizing chest volumes, together with the ShortFlow blending system, has helped us optimize production.”

Helmut Hofherr, Head of Paper Production



The approach flow system to PM6 supports a two-layer headbox. It consists of a ShortFlow blending system (for wire and felt layers) as well as the headbox screens and fan pumps and gives Fripa lots of flexibility for grammage and color changes.

“The two-layer headbox has a stiff lamella which allows us to optimize the purity and fiber structure of each layer by adjusting the jet velocities of each layer,” Liebich says. “From our point of view, the two-layer headbox in combination with a suction roll and high-temperature hood offers the best combination to produce high-quality toilet paper with a relatively low chemical input.”

The PrimeForm CrescentFormer generates a uniform paper web with best possible formation quality. The press section consists of a single suction press for high product quality. Following the press, the PrimeDry Yankee is ribbed and optimized for a high heat flow and an even drying profile. The high-efficiency EquiDry S hood is designed for 600°C and has automated Correcta-Zones which allow regulation of the moisture profile. Beginning at the creping doctors, the sheet run

is equipped with threading and sheet support equipment and a dust removal system. The reel, called the PrimeReel Standard, is pneumatically controlled and includes linear primary arms and pivoting secondary arms.

A working partnership

Like every project, this one had its challenges. “A big challenge for us was the Bundes-Immissionsschutzgesetz (BlmSch) federal law for emissions protection,” Noack says. “We do not deal with that on a regular basis, so it was considerable work for us to go through the licensing procedure. Even with the support of our provincial government, it took one year to get all the permissions.”

Another challenge was the space issue. Fripa defined the place for the new machine and had to purchase some additional real estate. This impacted their existing infrastructure during the construction phase.

“But despite these challenges on our side, the project was executed in an excellent way and progressed smoothly,” Noack says.

“We chose a turnkey delivery from Andritz,” Liebich says. “Fripa contributed only some small parts of the total installation. We built the hall and provided the steam, water, and electricity for the machine.”

“We did not have a dedicated project team to work solely on the new PM6,” Noack says. “Our employees had to cope with double workloads, because they had their regular jobs to do. That is probably the situation in many small and middle-sized businesses, so we relied heavily on Andritz’s project team. What impressed me was that we were able to bring in our own ideas and know-how to the project. Andritz was flexible and encouraged a true partnership. It’s not just a commercial transaction for them, but an exchange of ideas and solutions. This has not been the case with other suppliers, especially in a turnkey delivery.”

Full speed in two weeks

In mid-March, Fripa began the start-up of the COMPACT line on a “stop-and-go” basis with the machine running at 1000 m/min. During the whole start-up phase, only about five tonnes of off-spec paper was produced. The small amount of rejects and the fast start-up were impressive accomplishments.

Within a few days, production was continuous, with the machine reaching incremental speeds of 1300 and

Fripa (Papierfabrik Albert Friedrich)

1500 m/min. After only two weeks, operational speeds of 1800 m/min were achieved. Also, after two weeks, the machine was operated completely by the Fripa team, without Andritz personnel on site. Andritz supported with 24-hour telephone availability for any questions or problems, but there were few occasions to use it.

“We had a very good start-up and reached relatively high production of super-soft toilet paper very quickly,” Liebich says.

“Minimizing chest volumes, together with the ShortFlow blending system, has helped us optimize production,” says Helmut Hofherr, Head of Paper Production at Fripa. “Changes in the ratio or fiber input or strength properties are conveyed to the machine very quickly which results in faster grade changes and more efficient optimization work. I was particularly surprised by the Andritz automation systems, especially in stock preparation area. The sequencing of start-ups, grade changes, and shutdowns all runs perfectly.”

Energy and environmental advantages

“The new machine is not as high as conventional machines and is engineered in a very compact, modularized design,” Liebich says. “This configuration has several advantages. Wire and felt changes can be made with minimal downtime. The machine is easier to clean than a conventional machine as it is smaller and more open.”

One of the design goals of the COMPACT design was energy-efficiency. According to Offenbacher of Andritz, the COMPACT concept with ShortFlow leads to less energy consumption, and also contributes to a faster return on investment.

“In the future, papermaking in Germany will not be possible without taking energy factors into consideration,”

Noack explains. “Energy will become the decisive question, as it highly influences the product from the cost side. The energy input on PM6 is low as we estimated, but our goal is to get it even lower. We have done a very good job of optimizing PM5, and I believe we can be as successful with the new machine.”

Same can be said about effluent volumes. “On PM5, we have about 1.8 l/kg of production,” Liebich says. “For the new PM6, we installed special components to further close the effluent loop. The amount of effluent is below what Andritz estimated, but we are sure there are further optimization possibilities.”

“Today, the stock preparation systems and water treatment systems are already fully optimized,” Liebich continues. “We still have some adjustments to make to the machine for product optimization. I think this should be completed by the end of the year. We have very high paper quality standards and want to reach a similar quality level at significant higher speeds as we have on our optimized PM5 right now.”

Flexibility in the market

As for Fripa’s markets, Noack is optimistic. “Before you can discuss the overall market, you always have to ask what your own position is,” he says. “There are companies that strongly focus on Europe. And, there are others that are positioned locally. We consider ourselves to be in the second category. We’re a middle-size business with our main focus in Germany. Due to acquisitions and takeovers, the competitive situation is tough, but there are advantages as well. As a result of mergers, customers are seeking alternative suppliers. From this point of view, new and interesting relationships will be initiated.”

►► find out more at www.fiberspectrum.andritz.com



“We had an excellent start-up and could achieve a high level of production capacity within a short period of time.”

Andreas Liebich, Division Manager Paper Production

▼ Wire and felt changes can be accomplished quickly due to the modular, compact machine design.



▼ As part of package, Andritz delivered the stock preparation system (ShortFlow™) for virgin fibers, a broke processing line, and the systems for water recirculation and fiber recovery. The delivery also included the automation systems. The approach flow system to PM6 supports a two-layer headbox. It consists of a ShortFlow blending system (for wire and felt layers) as well as the headbox screens and fan pumps and gives Fripa lots of flexibility for grammage and color changes.

