*Prime*Dry Steel cylinders yield better drying performance with the same size and operating pressure as traditional cast-iron cylinders, and thus help to increase production or save energy.

October 28, 2017 saw production of the first roll of corrugated base paper at Heinzel Group's Laakirchen Papier AG in Austria. ANDRITZ took on the challenge of the remarkable conversion of the mill's PM 10 from graphic paper to packaging paper, including a rebuild of the groundwood mill into a complete OCC line. The rebuilt machine is now performing well over the planned start-up curve, ready to capture a fast-growing market.

At Laakirchen, the prime concern of the parent company, the Heinzel Group, was to make the mill fit for the future. The history of this upgrade began in April 2013, after the Heinzel Group took over the location that was producing graphic paper grades on two paper machines. Mark Lunabba, CEO of Laakirchen Papier AG, remembers, "One of the first ideas our chairman, Alfred Heinzel, had was that we would have to improve our results and avoid being affected by the falling demand for printing grades."

Various possibilities were discussed, but it soon became clear that PM 10 would be ideal for the production of corrugated base paper. Lunabba says, "Market volume was also needed that would match the capacity of the machine. And as a result, corrugated base paper became our specialty."

GOOD FOUNDATIONS

The final decision on the rebuild of PM 10 was made in August 2016. It was decided that the machine would now be converted to make 450,000 t / a of high-grade fluting and testliner with a grammage of 70–140 g / m² from 500,000 tonnes of recycled fibers (RCF). A budget of around 100 MEUR was estimated. The other machine, PM 11, was to continue producing graphic paper grades in a highly efficient production process.

"We didn't want to run any quality risks," says Lunabba. "So it was important for us to go with tested and proven solutions. ANDRITZ has a great deal of experience with RCF lines and had also proved that they know how to successfully convert machines. However, ANDRITZ was new to corrugated base paper so we also had to work together closely and help each other in determining solutions."

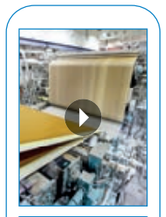
Another reason for placing the order in Graz, according to Lunabba, was the successful experience the Heinzel Group had with ANDRITZ and sister company Zellstoff Pöls, during installation of its PM 2 specialty paper machine, which went into operation at the mill in 2013.

Michael Pichler, Head of the global Paper and Tissue Division at ANDRITZ, also emphasizes that it "was a project of high strategic significance, and Heinzel was the ideal partner for us. There is a great deal of mutual trust."

The rebuild covered the stock preparation system, the wet end and dry end of the paper machine, the film press as well as automation. In addition, ANDRITZ supplied the complete basic process engineering.

CRITICAL PHASE

The rebuild phase was influenced by two special factors: the extreme time pressure – a corridor of only twelve months was defined between the decision to make the investment and start-up of the machine rebuild – and the customer's stipulation to integrate as much of the



For more information about the conversion of the mill's PM 10, view the video on your smartphone.

Scan this QR-Code!

MARK LUNABBA
CEO, Laakirchen Papier

"The overall result is very positive – ANDRITZ really proved that they were able to handle this project."

"We saw a benefit to have the stock preparation and the paper machine from one supplier. That's one of the reasons why we decided for ANDRITZ."

JAN REIBERT
PM 10 Production Manager
Laakirchen Papier

existing equipment as possible at the same time as allowing PM 11 to continue running alongside the rebuild work.

"The actual time scheduled for the rebuild work itself was ten weeks. We were then four days late in getting stock onto the wire. In view of the intensity of the rebuild, that was a very brief delay," says Mark Lunabba.

Johann Stadlmayr, head of technical planning, adds, "Completing this project within that time set new standards. After all, the shutdown phase was estimated at a point where we did not want as much rebuild work. Then more and more items were added in the course of the project, although the deadline remained the same because there was already a demand for the product on the market."

NEW STANDARDS

Up to 600 people were working on the site over a period of four to five weeks, and there were actually more than 800 there during the peak phase. There was very little space, the second machine was running, and as if that wasn't enough, building work, installation, and cabling had to be carried out simultaneously as well. "The overall logistics were an absolute masterpiece," says Stadlmayr.

"And the overall result is very positive, ANDRITZ really proved that they were able to handle this project," says Lunabba.

Stadlmayr adds, "Of course, there were some obstacles, but we were able to overcome them relatively quickly and professionally. Everyone involved went through a learning process in this project; however, drive never let up. The achievements of the ANDRITZ Project Manager, Franz Fischer, who did a very good job, were also very positive. He was extremely approachable, 24 hours a day, seven days a week, and was always able to suggest a swift solution." Fischer describes the start-up itself as an emotional roller coaster ride, "One day we would make good progress only to suffer a setback again the next day." However, now, the rebuilt machine is performing well over the planned start-up curve.

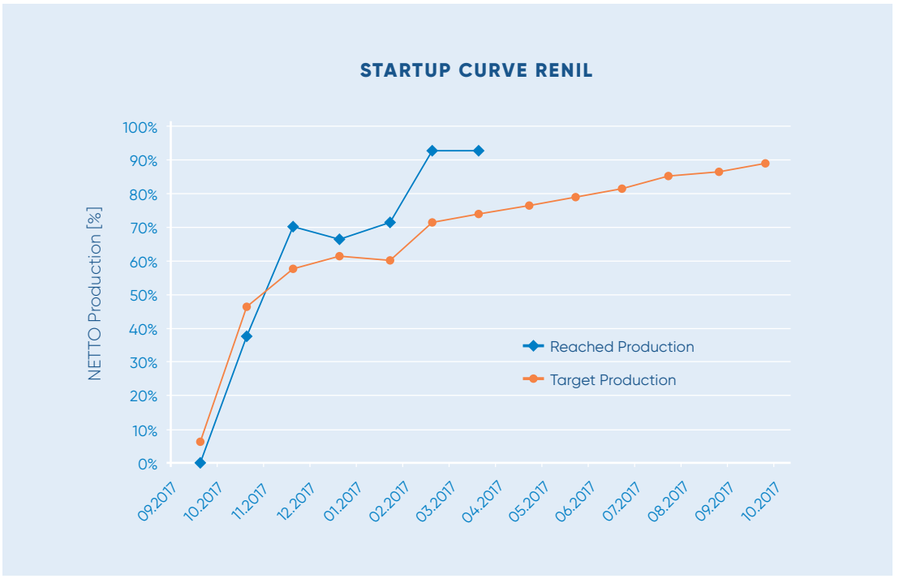
FAVORABLE FEEDBACK FROM THE MARKET

Jan Reibert, PM 10 Production Manager, confirms, "The paper machine is now operating with 100% recycled fibers. That meant a fundamental rethinking process for all those involved. The film press was also new ground for us, but we had it well under control from the word 'go'."

Two months later, the challenges involved in every start-up were resolved, and the paper machine is running very smoothly without any web breaks, according to all those involved. The highest daily gross production was recorded so far on March 17 at 1,360 tonnes saleable production. The speed was in the region of 1,200 m / min, and the operators have already set a target of 1,400 m / min. Since the beginning of the year, the plant has seen very stable production – considerably above the planned start-up curve.

ModuScreens TD tailing sceens are part of coarse screening. Efficient washing of fibers is done with a FibreWash Drum – one important part of the detrashing system.

The pulping system with detrashing includes a 130 m³ FibreSolve FSR pulper – the largest LC pulper ANDRITZ ever installed in Europe.



MICHAEL PICHLER
Division Manager
Paper and Tissue
ANDRITZ

"Heinzel was the ideal partner for us; there is a great deal of mutual trust."

"The market situation for our new product is currently very good. That's why we also did not want to have any delays," says Lunabba. The company expects the demand for corrugated base paper to increase by 5% per annum, so the timing is absolutely perfect. "We wanted to sign contracts at the end of 2017 for 2018," he says, and refers to the positive feedback from the market, "The goods we sent to customers received top ratings. There was not a single complaint."

GRAND FINALE

After 17 years at Laakirchen, Mark Lunabba is retiring. The PM 10 project was thus the grand finale of his career. "I am leaving on a high note and with confidence in the top-performance organization we have here."

Johann Stadlmayr is also looking to the future with optimism, "This was one of the most challenging, intensive, and exciting projects for Laakirchen and one that involved major changes. It was a great achievement and we can all be proud of where we are today. This is a key project for the future!"

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GETTING TECHNICAL

ADVANCED STOCK PREPARATION

The former groundwood mill was rebuilt into a complete OCC line with a capacity of 1,350 t / d. The rebuild of the existing approach flow system, as well as systems for sludge and reject handling, were also part of the scope. The pulping system with detrashing includes a FibreSolve FSR pulper with a volume of 130 m³, which is the largest low-consistency pulper ANDRITZ has ever installed in Europe. In the process, this is followed by high-density cleaners, coarse screens, and a five-stage cleaner plant. In coarse screening, ModuScreen TD tailing screens were combined with existing screens fitted with new BAR-TEC Rejector screen baskets and Dolphin rotors.

The fractionation section comprises a combination of existing equipment and a ModuScreen A with a matched screen basket / rotor concept and hydraulically optimized shape that guarantees both excellent fractionating effect as well as smooth operation. The long fibers are processed further in a four-stage screening plant – once again combining existing screens, fitted with new BAR-TEC Valeo baskets, with new ModuScreens F. In addition, in the short- and long-fiber lines, the stock is thickened with new and re-used disc filters and twin wire presses.

In the approach flow system two low-pulsation ModuScreen HB-E units with proven inflow design were installed in the base ply. The existing deculator, which is now used for dilution water only, has been rebuilt and converted from full flow to partial deaeration.

A PRIME REBUILD OF THE PAPER MACHINE

A *Prime*Flow TW double-layer headbox with *Prime*Profiler F consistency profiling system was installed at the wet end. This headbox enables the best profiles at maximum production flexibility with a stiff separating lamella between the layers. The new *Prime*Form TW gap former with a specially-designed forming suction roll surface provides high dewatering capacity and gentle dewatering at the same time and ensures high first-pass retention. Forming shoes on both sides of the sheet enable optimized dewatering within a broad operating range.

In the first drying group, the new generation of *Prime*Run Evo web stabilizers are used to improve the runnability of the machine after the press section. The *Prime*Run Evo web stabilization system uses step-by-step reduction of vacuum in free draw to control the paper web's runnability. The main principle is to divide the vacuum into three different zones depending on the vacuum needed to neutralize the forces and stabilize the web. In addition, *Prime*Run Duo web stabilizers were used in the pre-drying section and in the new after-drying section to enable an even web run throughout the drying section.

*Prime*Dry Steel cylinders were selected instead of traditional cast-iron. Steel cylinders yield better drying performance with the same size and operating pressure and thus provide a means of increasing production or saving energy. Moreover, a new air system including heat recovery for the rebuilt drying section was supplied to also enable energy-efficient paper production.

The new *Prime*Film film press applies starch simultaneously to both sides of the paper web in order to achieve the desired strength values at the high speed specified of up to 1,600 m / min. The *Prime*Air Glide AirTurn and *Prime*Feeder sheet transfer system ensure gentle turning as well as safe and rapid transfer of the web through the entire paper machine.

AT THE CLICK OF A MOUSE

In spite of the many innovative units and technical refinements, PM 10 can be operated very easily at the click of a mouse thanks to the *Prime*Control automation package. Johann Enzi, head of maintenance, electrical planning, and control engineering explains, "We already had a very high automation standard here, which was further developed in the course of the upgrade project. ANDRITZ addressed our situation very well when preparing the automation concept."