

# Good chemistry ... good service

ANDRITZ installed a new chemical recovery island as part of Zellstoff Rosenthal's major mill conversion back in 1999. Recent improvements made together show that the partnership remains strong to this day. A critical shutdown to do further improvements to the boiler was recently completed.

◀ Recovery boiler, installed by ANDRITZ in 1999 and modernized during a critical shutdown in 2012.

## A "continuing dialogue"

ANDRITZ began its collaboration with Zellstoff Rosenthal (ZPR) at a critical moment in the mill's history.

The pulp mill at Blankenstein, Germany was first built in 1883. After WW II, the Thuringia region was taken over by the German Democratic Republic. "The technology connections this mill had with the West were broken," explains Hansjörg Krieg, Head of Technical Department. Krieg has a unique perspective on the mill, since he has worked at ZPR for 50 years.

When the Berlin Wall fell in 1989 ZPR re-entered the competitive world of market economies. It was privatized when Mercer International came into the picture in 1994. Mercer decided to convert the mill from sulphite to sulphate, and called upon ANDRITZ to help.

ANDRITZ performed digester modifications and delivered the entire chemical recovery island. Production rose to 310,000 from about 200,000 t/a. "We were extremely satisfied with the work ANDRITZ did," says Krieg, who was Project Director for the conversion in 1999.

It is a continuing dialogue today. "ANDRITZ often reviews our processes and makes suggestions which we evaluate in the context of our Rosenthal 400 plan," says Mill Manager Christian Sörgel.



*"Rather than do one large investment project, we set about doing it in steps."*

Adolf Koppensteiner  
Managing Director, Zellstoff Stendal  
(former Mill Manager at Zellstoff Rosenthal)



*"This shutdown was key to de-bottlenecking the mill."*

Christian Sörgel  
Mill Manager  
Zellstoff Rosenthal

## History and chemistry

Rosenthal 400 is the plan to bring production up to 400,000. It started in 2007. By 2012, production increased to 350,000 t/a. "Economics did not allow us to do this as one large investment project," Koppensteiner, former Mill Manager explains. "So we are doing it in steps. While we can't change wood prices or pulp prices – we can focus on improving what we do here."

ZPR has a long history of sharing ideas with key suppliers and of learning from them.

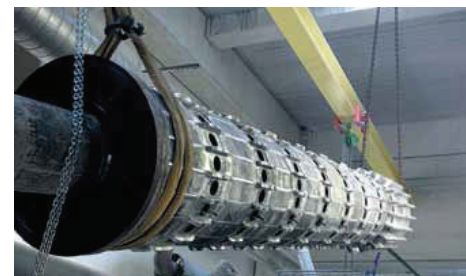
"We have some exceptional people at this mill," Koppensteiner says. "People chemistry has always been important to us, and we have been very satisfied with the long partnership between our experts and the experts at ANDRITZ."

## Chemical recovery bottleneck

Increasing pulp production through Rosenthal 400 required ZPR to add chemical recovery capacity. As Sörgel explains, "This is key to de-bottlenecking the mill."

"ZPR is always eager to get the latest technology with high technical standards," says Walter Scholz-Sommerbauer, ANDRITZ's Regional Manager for pulp mill services. "In 2012, we mapped out a plan with a very ambitious time schedule."

The plan was to modernize and expand capacity in a 21-day shutdown: 1) increasing recovery boiler capacity from 1,650 to 2,300 tds/d while reducing corrosive chlorine in the ash, and improving emissions; 2) increasing both green and white liquor filtration capacity in the white liquor plant;



◀ As part of the recent de-bottlenecking project, ANDRITZ expanded capacity of the white liquor filter. This involved removing the 7 m long center shaft through a skylight in the building with only centimeters to spare in the window, modifying it to add two more discs, and then re-installing it through the same skylight.



▲ (Left to right) Hans-Joachim Milz, White Liquor Plant Production Manager; Ralf Tolsdorf, Maintenance Manager; Walter Scholz-Sommerbauer, ANDRITZ; Christian Sörgel, Mill Manager; and Visa Kuutti, ANDRITZ, on the newly modernized CD-Filter.



▲ Hans-Joachim Milz, White Liquor Plant Production Manager (left) and Visa Kuutti of ANDRITZ in front of the ANDRITZ evaporators. ZPR recently ordered a new laser-welded lamella package for the evaporator.



▲ ZPR now gets about 100 t/d more production out of its digester as a result of several small improvement projects. The most recent upgrade to the fiberline was the replacement of the lower extraction screens with new ANDRITZ SureFlow diagonal screens.

and 3) improving stability while increasing capacity in the fiberline.

The centerpiece of the modernization was the recovery boiler, which ANDRITZ supplied new in 1999. This modernization was not an easy one, according to Janne Kolehmainen, ANDRITZ Project Manager. "It was a very short time to do such an extensive rebuild," he says. "We replaced the primary air ports, added a new secondary air system, and enlarged the tertiary air ports. We also modified the nose arch, installed additional water screens, added 18 sootblowers, modified the vent scrubber, and modified the water/steam circulation to increase capacity. We also relined the dissolving tank with stainless steel, something we had not tried before, but it turned out to be very successful."

The shutdown took one more day than planned, but this was only because of severe space limitations inside the boiler, according to Sörgel. "ANDRITZ had the manpower and the plan, but the space was so tight on the second floor of the boiler that it could only accommodate a limited number of welders at one time."

Working with such a time crunch required great cooperation from both partners, says Sörgel. "Even in the most stressful times we found a fair way to move forward," he says. "You can only do this if you trust each other. We were prepared for some problems after start up, but they did not happen. We can now increase production without a bottleneck in recovery."

#### Careful planning in the WLP

"Our mission was to add a LimeGreen filter to increase filtration capacity of raw green liquor and to modify the CD-Filter to also



▲ Andreas Dietzsch, Assistant Fiberline Manager in front of Diamondback bin, which ANDRITZ added to the fiberline.

increase its capacity," says Hannu Sankala, Project Manager. "The modifications to the CD-Filter were challenging due to its location."

Sörgel was impressed with the CD-Filter work. "The shaft was removed so that two additional discs could be added," he says. "By moving the suction head and filtrate valve outside the unit, there was now room for 10 discs in the same filter body. The main challenge was that the shaft had to be lifted through a skylight in our roof. There were only centimeters to spare, but ANDRITZ made it."

The CD-Filter modifications required new civil works to be supplied by ZPR. "The normal curing time for the concrete is 14 days, and we did not have 14 days," Sörgel says. "So, together with ANDRITZ, we arrived at the solution of using pre-fabricated concrete slabs to reduce the volume of concrete poured on-site. Hannu and his crew from ANDRITZ Savonlinna (Finland) did excellent work."

#### High-performance cooking

Andreas Dietzsch, Assistant Fiberline

Manager, oversaw the upgrades to the cooking plant. In 1999 when the mill converted to sulphate cooking, ANDRITZ upgraded the digester and feed line with a Lo-Level feed systems and Diamondback chip bin. A new pressure diffuser washer was also installed. "In the last 10 years, we have done many small improvement projects with ANDRITZ," Dietzsch says. "We have had a rather unique situation in that Juha Welling (ANDRITZ Project Manager) has been our key contact for the fiberline, and was also part of the big conversion project in 1999. He knows this mill very well, and has been a big help in each improvement."

The most recent upgrade was the replacement of the lower extraction screens with new ANDRITZ SureFlow diagonal screens. "The old digester screens were plugging, which caused stability problems," Dietzsch explains. "Each shutdown, it was a three-day process to cut, clean, and re-assemble the screens."

ANDRITZ also modified the digester to remove the washing zone at the bottom of the digester and re-route some extraction liquor to increase cooking capacity. ZPR now gets



*"We were extremely satisfied with the work ANDRITZ did during our major conversion project."*

Hansjörg Krieg, Head of Technical Department at ZPR. Krieg was Project Manager for mill's conversion from sulphite to sulphate in 1999.

about 100 t/d increased throughput. "Not all of this can be claimed by the SureFlow screens of course, but I can say that there are no longer pressure differences and the digester is running very stably."

Dietzsch has this to say about the partnership: "This has been a long-term commit-

ment to partnership. We have worked with the same ANDRITZ people for many years, so we have continuity. From my experience, this is not normal with other suppliers."

#### Further improvements

Service improvements continue almost daily. Most recently, ZPR ordered an upgrade to the cooking plant and a new lamella heating surface package for one of its ANDRITZ evaporators. "ANDRITZ's lamella design provides a very cost-effective solution," says Visa Kuutti, ANDRITZ service engineer for evaporation. "With our new laser-welding capabilities, instead of resistance welding used in the past, the construction and durability of the lamellas have improved."

Each improvement is a step closer to completion of Rosenthal 400. Sörgel concludes: "We are always working on the next improvement, and we are regularly discussing with ANDRITZ. You know, the two partners have bonded pretty well, and our bond is enabling us both to fulfill our goals."

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