

SUCCESS STORY

Perlen Papier AG saves
money with improved
steam recovery



perlen papier ag

PULP & PAPER

TAILOR-MADE SOLUTION DOUBLES STEAM RECOVERY

SAVING MONEY AND PROTECTING
THE ENVIRONMENT

ANDRITZ

ENGINEERED SUCCESS

(S)teamwork at Perlen Papier AG

Perlen Papier is Switzerland's only producer of newsprint and magazine paper. They run a two-machine mill that features one of the largest, fastest and most modern newsprint machines in Europe. The mill is highly focused, making only publication papers, with 360,000 tons per year of newsprint and 200,000 tons per year of LWC magazine papers.

ANDRITZ has been working with the company since 1995, when it installed Perlen's thermo-mechanical pulp (TMP) plant – a 100,000-ton per year, 100% spruce-based line that feeds both paper machines. Since then, ANDRITZ has carried out upgrades every couple of years, although the TMP plant's high-speed RTS refiner line had been soldiering on for 27 years with its original Cyclone and Swept Orifice Discharge units. Operations Engineer Michael Stokowy, explains, "We operators wanted to upgrade them because they were no longer in the best shape, and it was difficult to get spare parts. The mill management wanted to increase the steam recovery," which would reduce costs and prepare for any future increase in TMP capacity. Perlen decided to replace the old units with a pair of new Cyclones and Plug Screw Dischargers (PSD). They wanted maximum steam-separation capacity for the available space, and as Robert Pfeiffer, Head of Project Management Refining Systems Service at ANDRITZ Pulp & Paper, explains, "it had to fit in the existing building, otherwise it would have been too expensive." Unfortunately, this meant that ANDRITZ's existing PSD 600 and 800 models were too big, while the PSD 400 was smaller than desired.

So, with instructions to deliver maximum capacity in the limited space, ANDRITZ agreed to design and manufacture a unique new model – just for Perlen.

To make the best use of the available space, the new PSD 500L is wider than the 400 and narrower than the 600, but also longer ("L") than all the standard models, increasing the compression zone by 50%. This ensures optimum fiber compression and density on the screw, while also treating the fibers as gently as possible. Meanwhile, the new ANDRITZ standard Cyclone CYS1400 that feeds into the PSD effectively separates the steam and feeds it into the Heat Recovery system to be used for a range of different purposes, which saves money and benefits the environment.



"Right from the start, Perlen was interested in making savings, so I showed them the considerable energy savings that the project could deliver. Our ROI projections also made a good impression."

CHRISTOPH ERNET,
Director Technology, HC Refining
ANDRITZ

SWISS PAPERMAKER: PERLEN PAPIER AG

Newsprint: **360,000 tons** per year

LWC magazine papers: **200,000 tons** per year



Tailor-made solution fits given space

Installing such precisely tailor-made equipment into such a tight space would normally take at least several weeks. But in this case, the installation had to take place in just five days of downtime that were already planned for the mill's annual maintenance. Nevertheless, ANDRITZ and Perlen worked fast and efficiently and succeeded in meeting the very tight deadline. Perlen placed the order in January 2022 and the unique, new equipment arrived just 6 months later. The pre-installation work took place in August and installation and startup in September 2022.



ANDRITZ tailor-made PSD500L plus proven cyclone technology on top.

Keeping the installation on schedule was helped by good collaboration between ANDRITZ and Perlen. Michael Stokowy explains, "It wasn't easy - it was a nervous week! We couldn't do everything at the same time, because there's not enough space. It was fairly complicated, but we planned it by the hour, with 24-hour working days. The electrics were a particular challenge, because they could only be hooked up and tested from day three. But we had the site really well under control, with daily updates."

Robert Pfeiffer notes that "We solved problems together" and in that context, Michael Stokowy was especially pleased with the support from Heinz-Peter Wiedenhofer, ANDRITZ's Assembly Supervisor. "He is very customer-friendly and did very, very good work. He turned up early, he was always available, very prepared to work a few more hours and he always found a solution for any problem. Identifying problems was half of my role during the installation, so Heinz-Peter made things very pleasant for me, because I personally didn't have much problem-solving to do."



Michael Stokowy, Operations Engineer, Perlen Papier was especially pleased with the support from Heinz-Peter Wiedenhofer who was intensively involved in the project handling at an earlier stage.:

"He is very customer-friendly and did very, very good work. He turned up early, he was always available, very prepared to work a few more hours and he always found a solution for any problem."





ROI exceeds all expectations

The new units are still in the optimization phase just a couple of months after startup, but even so, Perlen has already considerably exceeded some of its process-related targets. For example, the aim was to increase steam recovery volumes from 6 to 9 tons/hour, but the new units are already operating consistently at 14.5 tons/hour. This means more steam for use e.g. in the paper machine dryer section and for heating the paper machine hall, which saves Perlen money on buying steam from the local waste-powered energy plant. It also lowers the temperature of the refined fibers in the latency chest, and once optimized, that should improve fractionation efficiency in downstream screening, easing the load on the reject circuit, resulting in even more energy savings. The lower temperature should also limit fiber yellowing and reduce consumption of bleaching chemicals, as well as minimizing wear on thickening units. Zoran Jovanovic, TMP Line Manager, also adds that the new units are running far more cleanly: "Instead of having to be cleaned every three days (taking $\frac{3}{4}$ of an hour each time), now it's only once every 10-11 days, at least."

Exceeding the project goals also means a faster return on the investment (ROI) than Perlen had planned. The target was 1.7 years, but that is now expected to be less than 1 year. "It's saving us quite a lot of money," confirms Michael Stokowy. More than that, "It's saving our nerves! It's working well and we have fewer worries about maintenance."

Robert Pfeiffer explains that this project reflects ANDRITZ's philosophy of focusing on the papermaker's day-to-day reality, along the whole production line. "We believe in 'small steps, big success'. It's not all about just getting a one-time sale, but on continuing a long-term partnership. So, we want to provide what will help them the most, within their budget." It also demonstrates that an innovative ANDRITZ upgrade can help save both money and the environment.



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ZORAN JOVANOVIC,
TMP Line Manager Perlen Papier



"We believe in 'small steps, big success'. It's not all about just getting a one-time sale, but on continuing a long-term partnership."

ROBERT PFEIFFER,
Head of Project Management Refining Systems Service ANDRITZ





CONTACT US FOR MORE INFORMATION ABOUT OUR TAILOR-MADE SOLUTION!

We're happy to take up your challenges!



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