

One plus one is more than two. Wood, pulp, and paper have long determined the fortunes of the Pöls community in Styria. Here Zellstoff Pöls AG produces long-fiber sulfate pulp and kraft papers. With an additional production line based on the exceptional ANDRITZ *PrimeLine* paper machine, the Heinzl Group site is now focusing more than ever on the world market.



1+1=2



ANDREAS RAUSCHER
CEO
Zellstoff Pöls AG

“We have a strong intention to achieve together something extraordinary at all levels of cooperation, whether in management or in technology.”

Mountains, forests, trees. Earthy brown and lush green. Visitors to Pöls can already sense from a distance what the heartbeat of the small community in Styria feels like. And the closer they get to the factory buildings and towers of Zellstoff Pöls AG rising into the sky, the more certain they become that Austrian Heinzl Group's mill – where long-fiber sulfate pulp and kraft papers are produced – has shaped the fortunes of the town and region for many decades.

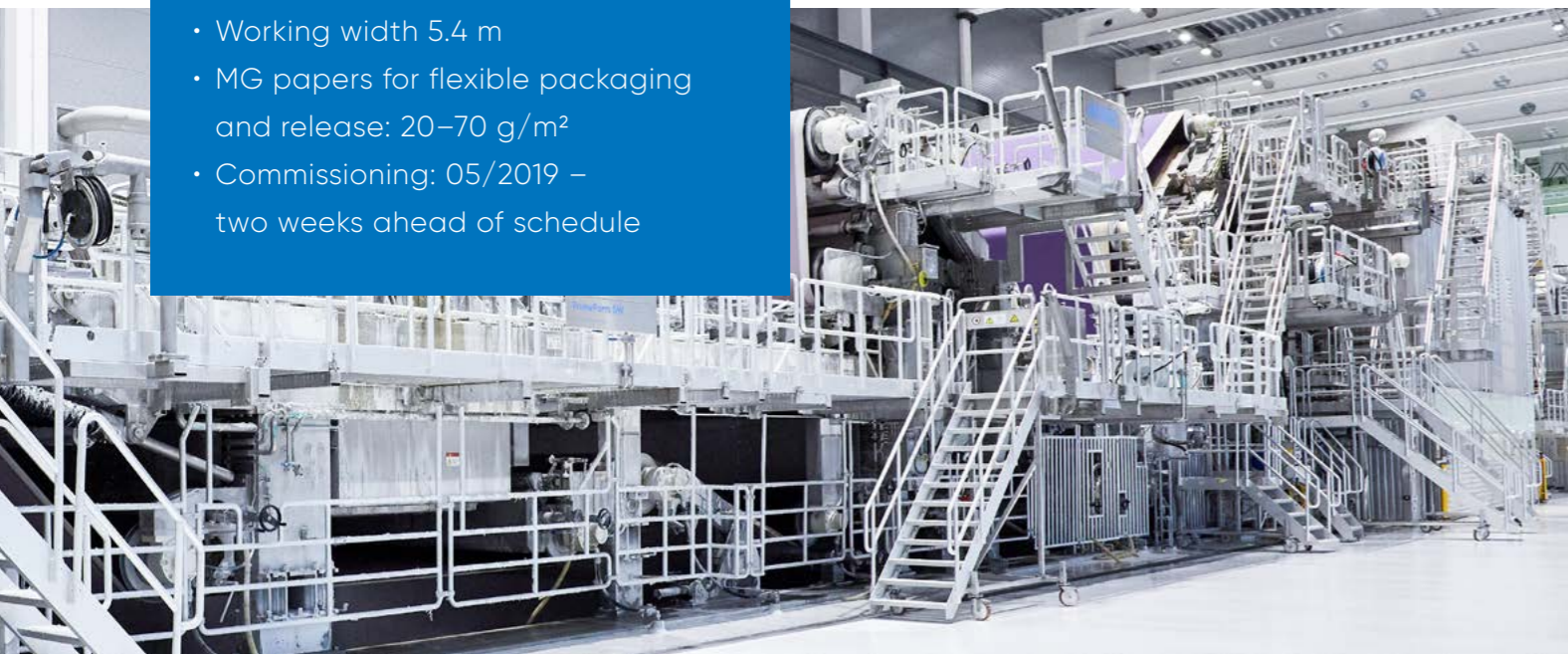
More than 500 people work at the site, and signs are pointing towards further growth. After a PrimeLine MG paper machine from ANDRITZ, PM2, went into operation back in 2013, another even more powerful machine, PM3, followed in the summer of 2019. With this machine, production has taken a giant step forward; capacities have increased from 100,000 tonnes to 200,000 tonnes of white kraft paper per year. This marks the dawn of a new era for Zellstoff Pöls AG. It has finally become a

global player, marketing its “STARKRAFT” brand across emerging markets worldwide. Zellstoff Pöls AG actively contributes to solutions for sustainably packaged food as their importance grows in supermarkets and fast food restaurants.

ANDRITZ is assisting the company in its aims. “We have a strong intention to achieve together something extraordinary at all levels of cooperation, whether in management or in technology,”

PM3 – MACHINE DESIGN AT A GLANCE

- Annual capacity 100,000 t
- Design speed 1,400 m/min
- Working width 5.4 m
- MG papers for flexible packaging and release: 20–70 g/m²
- Commissioning: 05/2019 – two weeks ahead of schedule



WERNER HARTMANN
Managing Director
Starkraft, Business Unit of
Zellstoff Pöls AG

“Due to their low basis weight, these paper grades are environmentally friendly and have a very good price-performance ratio.”



says Andreas Rauscher, CEO of Zellstoff Pöls AG. “ANDRITZ does not simply supply machines, but also supports us in the role of consultant and system supplier from the first to the last moments of a project. The formula ‘one plus one is more than two’ really does apply to the relationship between our two companies.”

Five TwinFlo disc refiners enable smooth and efficient refining.



KEY COMPONENTS IN STOCK PREPARATION:

- Vertical Screw Thickener (VST)
- FibreSolve FSV pulper
- Five TwinFlo disc refiners
- Five-stage cleaner system
- Five ModuScreen screens in stock preparation and ShortFlow approach flow system

Five-stage cleaner system for the new PM3



ERWIN HOLZINGER
Senior Project Manager PM3
ANDRITZ AG

“From the transport of the Yankee halves to the start-up of the complete production line: a really impressive project!”



The 24 ft MG steel Yankee is the largest of its kind worldwide.



Based on the unique ANDRITZ engineering and logistics concept, the Yankee was transported in two halves and assembled on site.

A SPECIAL MACHINE CONCEPT

The PM3 project launched in August 2017 bears witness to this. As with PM2, ANDRITZ developed and supplied the new production line, including stock preparation and approach flow system, automation technology, process pumps and, of course, the paper machine itself.

PM3 went into operation at the end of May 2019, two weeks before the scheduled project date, and has since been producing kraft paper for a wide range of packaging applications as well as release papers. With an annual capacity of 100,000 tonnes, a design speed of 1,400 meters per minute, and a working width of 5.4 meters, it is the largest machine of its kind in Europe.

The customized concept, which is characterized by efficient refining, a specially designed wire section, and a closed draw press, among other elements, is unique. The configuration allows flexible production of paper qualities with maximum strength, high printability, and low basis weight. “PM3 specializes in high-quality papers with basis weights of less

than 28 g/m², thus perfectly complementing PM2,” says Werner Hartmann, Managing Director Starkraft, Business Unit of Zellstoff Pöls AG. “Due to their low basis weight, these paper grades are environmentally friendly and have a very good price-performance ratio. This is precisely why our customers in growth markets are increasingly asking for these grades.”

Some special machine components are required to produce MG paper. An impressive component is the high-precision steel Yankee, where the paper is dried and the required surface property of the paper is created. The “PrimeDry MG Steel Yankee” from ANDRITZ, with a diameter of

7.315 meters and a weight of 200 tonnes, is the largest of its kind worldwide. “Logistics was one of the most exciting phases of the project,” recalls Siegfried Gruber, Head of Project Engineering at Zellstoff Pöls AG. “On August 4, 2018, the individual parts were brought to the site on trucks on the interstate freeway as scheduled before being welded together by ANDRITZ experts on site in the weeks that followed. In November, a huge, special crane lifted the Yankee into the machine hall.”

MG cylinders (Yankees) made of steel have significant advantages over cast iron models. Due to the elasticity of the steel, spontaneous fracture is impossible.

Furthermore, up to 10% higher heat transfer is achieved. “The extremely large diameter of the Yankee is of central technological importance. This ensures that the paper remains on the hot surface of the Yankee for the required dwell time, even at maximum production rates, in order to produce the smoothness typical of MG papers,” explains Gruber. “The effort has been well worthwhile as both the drying performance achieved and the smoothness of the paper are very good.”



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“The effort has proved to be highly beneficial as both the drying performance achieved and the smoothness of the paper are exceptional.”

SIEGFRIED GRUBER
Head of Project Engineering
Zellstoff Pöls AG



GETTING TECHNICAL

SUCCESSFUL START, GOOD PROSPECTS

Another innovative component is the Vertical Screw Thickener (VST). Due to its vertical design, the VST has a small footprint and takes up relatively little space. The vertical design has additional advantages; pulp fed in from above is dewatered by means of gravity and additional mechanically caused pressure. The entire available screening area at the bottom of the screw is fully used – resulting in high efficiency; the VST dewateres the pulp in Pöls from an inlet consistency of 3% to up to 30% at the outlet – a peak value.

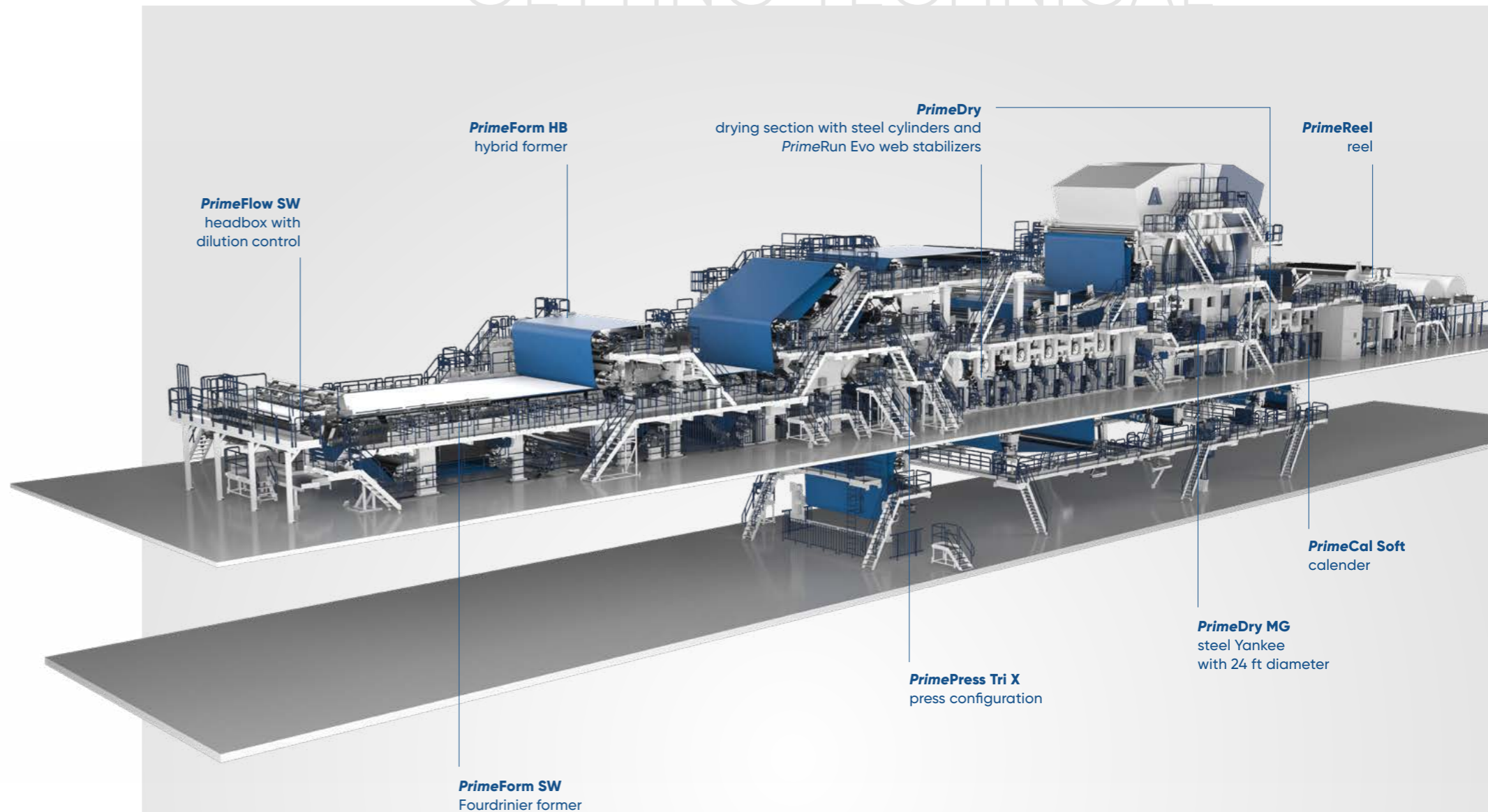
And there's a further aspect; the water circuits of the pulp mill and the paper machine are separated from each other. The VST is located just before the storage tower that supplies PM2 and PM3. The filtrate removed from the screw press is returned to the pulp mill where it is reused. The dewatered pulp is then diluted to 12% with hot water from the paper machine. It worked smoothly right from the beginning. This great start is certainly also due to the preliminary tests carried out at the ANDRITZ Stock Preparation Pilot Plant in Graz.



ZELLSTOFF PÖLS PM3 VERTICAL SCREW THICKENER (VST)

INSTALLATION OF NEW ANDRITZ DEWATERING TECHNOLOGY

- Located before the pulp storage tank that feeds the PM2 and PM3
- Enables separation of pulp and paper mill water loops
- Screw press with vertical configuration
- Dewateres pulp suspension from 3% inlet to 25–30% outlet consistency
- Previous tests in the Stock Preparation Pilot Plant, Graz



PrimeFlow SW
headbox with dilution control

PrimeForm HB
hybrid former

PrimeDry
drying section with steel cylinders and PrimeRun Evo web stabilizers

PrimeReel
reel

PrimeCal Soft
calender

PrimeDry MG
steel Yankee with 24 ft diameter

PrimePress Tri X
press configuration

PrimeForm SW
Fourdrinier former



“The good water circuit separation between pulp mill and paper machines is highly important as a shared water circulation could lead to problems. The system has been running without issues since the start and meets our expectations!”

JÜRGEN RIEGER
Paper Production Manager
Zellstoff Pöls AG





The forming section is equipped with a hybrid former.

Which raises the general questions of how PM3 has performed in the first five months of operation and expectations for the future. "We haven't completed all of the performance tests yet, but our experience has been very positive so far," says Jürgen Rieger, Chief Operations Manager Zellstoff Pöls AG. "The start-up phase was impressive. Operation is very stable, and the paper grades with basis weights between 20 and 52 g/m² were produced successfully. We

are optimistic that the machine will also run well under full load."

Nevertheless, this is by no means the end of the story. In Pöls, there are a number of considerations as to how paper production can be further optimized, for example, by increasing use of digitally supported tools, Big Data, algorithms, and Machine Learning. ANDRITZ offers its Metris solutions as a partner, especially as these products are already being

used in the stock preparation plant at Pöls. In papermaking, they could also increase efficiency by using sensors to collect and statistically analyze real-time process variables in order to initiate additional improvements directly in operation. Without a doubt, the PM3 marks a milestone for Pöls.

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Pre- and after drying section features steel cylinders for efficient heat transfer and web stabilizers for a stable paper run.

THE COMPANY: HEINZEL GROUP AND ZELLSTOFF PÖLS AG

With its industrial companies Zellstoff Pöls and Laakirchen Papier (Austria) as well as Raubling Papier (Germany) and Estonian Cell (Estonia), the Heinzl Group is one of the largest manufacturers of market pulp, specialty and magazine paper, and corrugated base paper in Central and Eastern Europe. Zellstoff Pöls AG generated annual sales of around 324 million euros in 2018. It is the largest manufacturer of high-grade, elemental chlorine-free, bleached, long-fiber sulphate pulp in Central and South-eastern Europe. Pulp is brought to market with the brand name "ORION", white kraft paper with the brand name "STARKRAFT".

