The Pöls paper factory operates Europe’s most modern kraft paper machine, setting standards in both speed and energy efficiency.

Zellstoff Pöls AG, Austria

Tough team for strong paper

A rhinoceros learned to fly in just 13 months. With the completion of the PM2, Europe’s largest and most modern kraft paper machine was put into operation in Pöls, Austria. It will be used to produce 80,000 t of kraft paper every year. The paper machine’s multimotor solution was realized using the Sipaper drives standard and Sinamics S120 converters.

Leading a successful enterprise sometimes implies choosing a different direction than others. Zellstoff Pöls AG, a Heinzel Group company in Austria, is the perfect example of this. Since late 2013, the company is producing a kraft paper called “Starkraft”, which is a typical specialty product. With its flexible and robust characteristics, Starkraft is ideal as gift-wrapping paper, in food packaging, for carrier bags, and in healthcare applications. For the company and its 400 employees, the new product is pointing the way to a bright and prosperous future. Whereas paper machines all over Europe are being shut down, the Pöls machine with the winged rhinoceros logo marks a strategic milestone for the Austrian company’s successful step into production for this niche market, which has projected European growth rates of up to 3%.

Deluxe investment

Kurt Maier, CEO of Zellstoff Pöls, and his team have achieved the seemingly impossible in pursuing this objective, by developing a paper machine that excels in every respect, the PM2. It is Europe’s largest and most modern machine of its type today and has
a maximum annual output of 80,000 t of paper – while using a third less specific energy than its predecessor, which itself could produce 14,000 t of paper a year.

State-of-the-art technology for absolute perfection

Zellstoff Pöls invested an impressive total of €115 million in the PM2 – the right business decision as it turns out, since the shortage of wood as a raw material has made prices increase in the meantime. “For us, this meant pushing even harder in the direction of end products than before,” says Siegfried Gruber, head of technical planning at Pöls. The machine builder Andritz supported Zellstoff Pöls during the planning and implementation of the new PM2. Siemens was responsible for the entire power distribution system and supplied the medium-voltage switchgear, distribution transformers, converter transformers, low-voltage switchgear, uninterruptible power supply (UPS) systems, medium-voltage and low-voltage motors, frequency converters, control equipment, machine-oriented control, and higher-level control system. Using the Sipaper Drives standard and Sinamics S120 converters made it possible to realize a multimotor concept for the paper machine. The power engineering is designed for an overall connected electrical load of around 19 MW.

Nothing ventured, nothing gained

After only 13 months of construction, the first reel of kraft paper was produced on November 10, 2013. The machine is not yet running at full load. With a projected annual output of 56,000 t (later increasing to 80,000 t), however, the Austrians are on schedule to achieve annual growth rates of up to 3%. “Despite its strength, the paper is incredibly thin and of exceptional quality,” says Gruber with delight when showing visitors his “baby,” which produces 1,000 m of paper every minute. At the same time, the machine is extremely energy efficient. The modern multimotor drive and the excellent design of the assembly units are helping the company cut around one-third of its annual specific energy costs. In total, some 200 largely frequency-controlled drives are used in the new machine. Synchronizing all these motors was one of the key challenges to which the project team responded with passion and success. Unlike with the old machine, it is now possible to recover the braking energy for use in the system, thereby reducing the machine’s energy requirements.

It really is true: a rhinoceros can fly. Especially if you have the right experts on your team. And this applies to the machine as well as its Starkraft paper. “The flying rhinoceros symbolizes the best of both worlds: our new paper is extremely resilient, and at the same time our high-tech plant makes it possible to produce a wide range of paper thicknesses, ensuring maximum flexibility for our customers,” says Werner Hartmann, managing director of the Starkraft business unit at Zellstoff Pöls, beaming with joy as he reports on Starkraft. Indeed, the PM2 is now a star in the world of kraft paper.

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