

Experience counts

Mondi Packaging Frantschach can rely on ABB
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The 125 year old Mondi Packaging Frantschach mill sits in the Lavant Valley amid the breathtaking beauty of the southern Austrian Alps. Three paper machines produce approximately 250,000 tons of sack and kraft paper per year. Frantschach's high quality pulp and paper are used to produce high quality end products. Producing pulp for the Melitta coffee group as well as luxury paper bags based on its kraft paper, the mill's overall export rate is more than 80 percent of production. Quality is the key factor and to maintain such high quality, the company's strategy is to modernize continuously to ensure it has the most up-to-date technology. And helping Frantschach in this task is one of its many long-term partners, ABB.

The Mondi Packaging Frantschach ¹ Factbox mill has three paper machines, the PM 6, 7 and 8, that produce approximately 250,000 tons of sack and kraft paper per year. The wire width of the PM 6 is 490 mm and the sack paper produced covers 60-125 grams per m². With a speed of 920 meters per minute, the PM 6 is one of the fastest sack paper machines in the world. The PM 8 also produces sack paper and has a wire width of 510 mm and a speed of 830 meters per minute, while PM 7 produces kraft paper of 30-150 grams per m² with a speed of 350 meters per minute. The Frantschach mill also produces approximately 50,000 tons of unbleached market pulp per year, and uses spruce and pinewood as the raw materials. Franz Maischberger ² is Head of the Project Department responsible for Electrical, Process Control and Process IT. He has been working at the mill for 29 years; his passion for stable state-of-the-art technology is one of the reasons for Frantschach mill's position as a technological forerunner. Mr Maischberger says that "the mill's strengths lie in: quality; Research and Development; employee skill; two highly efficient sack paper machines; and just-in-time delivery". Its outstanding approach to sack paper production sets the standard for many other Mondi sack paper mills.

End products

Frantschach's sack and kraft paper goes under the brand name of "ADVANTAGE". Sack paper needs to be of the very highest quality when one considers that some customers fill them with 25 or 50 kilos of cement, producing some 4,000 sacks per hour!

Operational profitability

Frantschach enables customers to achieve this by paying special attention to factors such as printability, strength, energy absorption and porosity¹⁾. Very few sack paper producers are able to meet such quality requirements. The world-renowned coffee filter brand, Melitta, acquires Frantschach's unbleached pulp. Other special pulp grades produced by the mill are used in the production of isolation material for transformers. Meanwhile the luxury paper bags used in many shops are based on Frantschach's kraft paper.

Quality is the key factor that embraces end products, the paper production process, the pulp mill process, the woodyard process as well as the staff's know-how. According to Mr. Maisch-

1 The 125 year old Mondi Packaging Frantschach mill sits in the Lavant Valley amid the southern Austrian Alps



2 Franz Maischberger is Head of the Project Department responsible for Electrical, Process Control and Process IT



berger, "We work alongside customers worldwide to achieve world grade quality. We want to be our customers' preferred, long-term partner." The same attitude emerges when Mr. Maischberger refers to suppliers. He prefers major, global suppliers who, in the long run, provide high quality.

Quality is a key factor – to maintain such high quality, the company's strategy is to modernize continuously to ensure it has the most up to date technology.

Basis for high quality

Several factors have contributed to the mill's reputation as a high quality pulp and paper producer. First of all, the company's strategy is to continuously modernize to ensure it has the most up-to-date technology. This is helped by the fact that it has reliable long-term partnerships with major P&P industry machine, and equipment and system suppliers. The Frantschach mill is currently reconstructing its wood yard and raw material mixing at a cost of approximately 20 million euros.

Secondly, the company identifies best practices in its production processes and is constantly accumulating experience through its "Knowledge for Production" continuous learning system. Each shift worker logs information on any incidents or problems, as well as the related actions and solutions. This means that all experiences related to the process are available online around the clock.

The third factor concerns health and safety. Mr. Maischberger says that "safety, health, environmental friendliness and a zero rate of accidents are our working environment goals". "This is a question of attitudes rather than techniques," he continues. As a result of this ambitious program, safety performance has developed significantly over the last few years.

ABB – a long-term partner

Equipment and PCs bearing the ABB logo can be found all over the mill. The second generation of Manufacturing Execution Systems (MES) solutions – the equivalent of Collaborative Production Management (CPM) – have been deployed in production planning and optimization, production tracking and quality management **3**. Three quality control systems delivered by ABB perform online quality control on

Factbox Mondi Packaging

The Mondi Packaging Frantschach is member of the Mondi Packaging Group, a leading European paper and packaging (P&P) company. It is active in the bag and flexibles business and has more than 100 production facilities worldwide.

The Mondi Group is owned by the Anglo American Group. Mondi operates worldwide and is principally involved in producing paper, packaging solutions, coating and business paper. In 2005, it employed 16,278 people with sales totaling 3,092 billion euros.

Mondi Packaging Frantschach GmbH is located in the Lavant Valley in Austria and was founded in 1881. It is responsible for all R&D within the Mondi Packaging Paper Division. The mill employs more than 500 people and in October 2006, it celebrated its 125th anniversary.

Mondi Packaging Frantschach mill has won several awards in recent years because of its attention to quality and innovation. In particular it has won countrywide environmental improvement and innovation awards.

Taking care of the environment

The nearby town of Frantschach-St. Gertraud has some 3,000 inhabitants, and the area is renowned for skiing in winter and its hiking and biking routes in the summer. Environmental issues are therefore of great importance to Mondi Packaging Frantschach and due to solid technology improvements, waste water figures have dropped to an 1,500 Inhabitants Equal Value, while SO₂ emissions have tumbled from 1,800 mg/m³ to 40 mg/m³. In 1998 the mill was certified according to the Environmental Management System ISO 14001.

PM 6, 7, 8 and the flash dryer ⁴, while ABB's Automation System, which already covers the paper machines, the pulp mill and the power plant, has just been upgraded and extended to now cover the wood yard.

CPM

Approximately 10 years ago, ABB delivered an MES system to the Frantschach paper mill. Some years later it was decided to install a new system because (a) the original MES system was nearing the end of its lifecycle and (b) Frantschach mill's corporate structure changed when it became a member of the global Mondi Packaging Group. For these reasons, the mill decided to acquire new production planning, production tracking and quality management systems from

³ The second generation of MES solutions have been deployed in production planning and optimization, production tracking and quality management



⁴ Three ABB quality control systems perform online quality control on PM 6, 7, 8 and the flash dryer



ABB in 2002 to cover the production scheduling of the flash dryer, paper machines, winders and rewinders as well as warehousing and logistics. According to Mr. Maischberger, "Our experience of ABB's earlier systems was decisive in our decision to purchase another CPM solution from them, as well as the financial aspect. The applications were designed as multi-mill solutions, possibly covering similar mills belonging to Mondi Packaging in the future."

The company identifies best practices in its production processes and is constantly accumulating experience through its "Knowledge for Production" continuous learning system.

A template solution, a proto system based on ABB's Industrial^{IT} CPM solution, was created as a first step. IT specialists from the Frantschach mill and ABB's Helsinki base worked together to install the new system. Even though it was based on a standard CPM solution, many customized features were incorporated to ensure that it fitted perfectly into the mill's processes. A challenging additional aspect was the linking of the ABB-CPM solution to a centralized SAP system built simultaneously. The system now supports 70 concurrent users.

A fundamental new feature of the template/proto solution is the Capability to Promise (CTP) feature, which gives a 100 percent assurance online to customers that Mondi Packaging Frantschach is able to deliver the right quality at the right time. Another unique feature, the integrated planning functionality, enables paper producers to forecast the amount of pulp needed for paper and market pulp production and to balance this with the planned production of bulk pulp.

The project was called SPARK 2, and lasted three years. Mr. Maischberger said that "the reasons underlying our

investment decisions – improved processes, quality and better customer service – have all been borne out." A similar system, based on this Frantschach template, was successfully installed at the Mondi Packaging Dynäs mill in May 2006.

Enterprise integration the key to success

A fully integrated mill means that every aspect of the mill can be controlled. The wood yard was modernized and is also controlled using the control system delivered by ABB.

The original pulp mill control system was delivered between 1996 and 2000 and was upgraded in 2006 to include the latest advanced features of the current system. This system comprises 12 ADVANT AC450 controllers and 16,000 input/output points gathering information on processes, with about 20 operator workstations. The paper mill system is based on ADVANT AC460 technology which operates all three paper machines on one Distributed Control Network. Therefore sitting in a conference room, for example, an operator can connect online to the pulp and paper mill processes and simultaneously display the continuous cooking process, paper machine operation and QCS in real time.

Access rights are set up so that each user gets the required information for timely and informed decision-making. In the same way, online history data is made available immediately. This fully integrated solution is helping to improve the productivity of the entire mill.

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Footnote

¹⁾ Printability, strength, total energy absorption and porosity are the most important quality features in sack paper. Frantschach has a quality control system for every paper machine; these ADVANT 1190 systems have been controlling basic paper properties for many years.