Laakirchen PM 11 –
State-of-the-art production line for SCA-Plus grades; a challenge for LWC paper

In September 2000 SCA Graphic Laakirchen ordered a new paper machine from Voith Paper, complete with offline Janus MK 2 calender, to produce high-grade SC-papers for offset and rotogravure printing. The commissioning of this new line in May 2002 was particularly successful – numerous quality parameters very soon exceeded all expectations.
After forty years of excellent service, the old Laakirchen SCA PM 3, delivered by Voith in 1962, was ready for its well-earned retirement, and duly replaced by PM 11 after commissioning.

This new Voith paper machine 11 was started up well before the deadline. It went on line five weeks earlier than planned, and very soon proved its potential for meeting the required quality standards. Due to limited availability of stock, its operating speed is restricted to 1,300 m/min during the initial phase.

The great success of this project is attributable to the intensive cooperation between SCA and Voith, with clearly defined responsibilities down to the last detail, and precise control thanks to interface protocol reporting.

Thanks to primary target-setting by Voith for the key mechanical and plant engineering partners, the paper machine was rapidly integrated into the overall process on a systematic and well-proven basis.

Professional project management ensured full compliance with the erection and installation schedule.

Special attention was paid to acceptance testing of individual prefabricated components at the various production locations. Functional trials were done in advance on the units and control systems.

A comprehensive test schedule was drawn up to ensure compliance of all the PM 11 components with specific requirements.

The production line commissioning was systematically organized right down to the last detail. As shown by the results, this guaranteed smooth and trouble-free startup of the entire line.

**Technical data of PM 11**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wire width</td>
<td>9,650 mm</td>
</tr>
<tr>
<td>Finished sheet width</td>
<td>8,700 mm</td>
</tr>
<tr>
<td>Design speed</td>
<td>2,000 m/min</td>
</tr>
<tr>
<td>Planned annual output</td>
<td></td>
</tr>
<tr>
<td>Phase 1</td>
<td>240,000 tons</td>
</tr>
<tr>
<td>Phase 2</td>
<td>360,000 tons</td>
</tr>
<tr>
<td>Basis weight</td>
<td>38-65 g/m²</td>
</tr>
<tr>
<td>Paper grades</td>
<td>SCA-Plus, offset and rotogravure printing papers</td>
</tr>
<tr>
<td>Production start-up</td>
<td>May 2002</td>
</tr>
</tbody>
</table>

**Fig. 1:** Laakirchen PM 11.

**Fig. 2:** Schematic layout of Laakirchen PM 11.
Based on the One Platform Concept, this production line includes the following components:

- ModuleJet headbox
- DuoFormer TQv
- Tandem NipcoFlex press
- TopDuoRun dryer section
- Sirius winder
- Offline Janus MK 2 calender
- VariTop slitter-winder
- Roll transport system
- Twister roll packaging machine.

**Concept**

Sheet formation and subsequent drainage in the press section of this new paper machine take place under fully controlled conditions. The result is uniform product quality in every respect.

"The unprecedented profile uniformity both in the machine and cross-machine directions, and absolute surface equality on both sides of the sheet, ensure smooth running in the printing press without any folding – which also helps to enhance printing efficiency", says Wolfgang Kühnel, manager technical customer service at SCA Graphic Laakirchen. “Thanks to close teamwork with PM 11 manufacturer Voith Paper and our SCA Graphic Research department in Sweden, we arrived at an intelligent combination of numerous production factors ranging from the design concept and furnish composition to the finished product”.

**Goals set for SCA Laakirchen**

The construction permit for this project was already applied for in 1991. Primary objective was to replace the old PM 3, dating back to 1962, setting the following implementation goals:

- Production capacity increase to 484,000 tons p.a.
- Paper product quality as least as good as with Laakirchen PM 10, and significantly better than with Laakirchen PM 3.
- Project completion time 21 months.
- State-of-the-art but well proven technology.

**Development target**

The future-oriented key concept for this new paper machine was “convertible”, since the current quality gaps between SCA and LWC grades will probably cease to exist before long. This assumption decisively influenced the entire paper machine concept.

Production tonnage increase and the paper machine operating speed of 1,800 m/min apply both to the SCA and the LWC alternatives. The question as to
the final concept was to be answered during the development of PM 11, for which intensive research work started prior to commissioning and will continue for some time to come.

The PM 11 concept embodies the development potential for producing SCA-Plus paper of the highest quality. If LWC quality standards can thus be reached closing the gap between the two grades, a quantum leap will have been reached with a single machine concept at the highest operating speed.

Partnership type cooperation between the paper machine operator and supplier throughout the entire project makes this development possible. All concerned are well aware of the great challenge involved, and even the most difficult problems are being tackled systematically with a view to long-term solutions.

At the present time, six months after start-up, the success of this approach has been confirmed. The new Voith Paper line with EcoCell flotation, paper machine, Janus calender, slitter-winder, roll transport and Twister packaging machines not only produces outstandingly high quality rotogravure and offset printing grades, but also sets a milestone with the specially developed Grapho Nova.
Voith Paper congratulates SCA Graphic Laakirchen on this impressive new production line, and shares their pride in what has been achieved so far. The enthusiastic feedback from our customers, after viewing this new line following the recent symposium in Salzburg, impressively confirms again Voith Paper’s competence in comprehensive customer and product-oriented solutions.

Company overview

SCA Graphic Laakirchen is one of Austria’s longest-established paper mills. Founded in 1867, the company was taken over in 1963 by Wilfried Heinzel and expanded. In 1988 it was acquired by Svenska Cellulosa Aktiebolaget (SCA) of Sweden. With 550 employees, SCA Graphic Laakirchen turnover for 2001 totalled 233 million Euro. Production in Laakirchen exclusively consists of super-calendered (SC) rotogravure and offset printing papers.