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Success in South Africa – Mondi relies once more on Voith Paper

With a handshake, in February 2004 Voith Paper received a major order from Mondi Fine Paper South Africa to rebuild the PM 31 at the Merebank paper mill. The order volume amounts to 50 million Euro.

Mondi International is a subsidiary of AAPlc, which has major interests in South Africa, in the mining of precious and heavy metals, as well as forest products. AAPlc is also very active in these and other industrial fields throughout the world.

Mondi is one of the two largest paper producers in South Africa and operates there and in Europe with separate structures. However, this geographical structure will be changed into a product-related structure in the near future. Mondi Fine Paper will become responsible for graphic paper grades, and Mondi Packaging for the board and packaging grade divisions – these two are forming Mondi International.

The uncoated wood free paper grades at the paper mill in Merebank together with the Richards Bay pulp mill will, in future, form part of a new division known as Mondi Fine Paper South Africa. Similarly the paper mills of the Neusiedler Group in Austria, Hungary, Slovak Republic, Rus-

sia and Israel will become the European arm of Mondi Fine Paper.

The production of cardboard, packing, kraft and corrugated papers as well as converting and the recycled paper businesses will be allocated to the new division Mondi Packaging and includes Frantschach AG and Frantschach Packing as well as the paper mills in Austria, Switzerland, Italy, Poland and China which have recently been taken over from the Bauernfeind Group. The South African cardboard and packaging mills in Springs, Felixton, and Piet Retief will be incorporated into Mondi Packaging South Africa.

The PM 31 in Merebank, which currently produces magazine papers, is to be rebuilt and converted to produce uncoated, woodfree copy paper grades. During the projecting phase, various proposal discussions and meetings in South Africa, Vienna and Helsinki took place. Jaakko Pöyry had worked out the pre-feasibility study and the project invitation to tender.

In fact, this major rebuild nearly corresponds to a completely new paper machine. Only a few components were taken over from the old machine. The new PM will have a new wire width of 6,370 mm and produce 250,000 t/year of copy paper with a basis weight of 80 g/m² at an average operating speed of 1,300 m/min. The PM will be laid out for a design speed of 1,500 m/min.

The new PM is practically a follow-up order in the Mondi Group, because the concept for the PM 31 is nearly identical to the concept for the PM 18 in the Ruzomberok mill (Slovak Republic), which was started up successfully in September 2003. The Ruzomberok paper mill belongs to the Neusiedler Group which, in turn, is part of the Mondi Group.

For this unit, Voith will deliver a Master-Jet G headbox with ModuleJet dilution-water technology for best basis-weight distribution and fibre orientation. Excellent CD profiles can be expected with the Profilmatic M control concept. Lamellas

in the slice nozzle improve the turbulence characteristics, by which the paper structure is further optimized.

The DuoFormer TQv is responsible for excellent formation, a vertical former for higher operating speeds, symmetric dewatering and fast and safe wire and roll change.

The Voith press section, which consists of only one nip formed by a Single Nipco-Flex press, is the central part of the machine. This double-felted shoe press ensures a uniform sheet structure with highest dry content due to the homogeneous dewatering distribution. On the PM 18 in Ruzomberok, the runability proved to be excellent as well.

The CombiDuoRun dryer section is equipped with perforated paper rolls that are evacuated from the outside and located between the dryers and ProRelease stabilizers. This ensures best web release and efficiency. The ropeless transfer system is responsible for a safe and trouble-free paper tail transfer through the dryer section.

The SpeedFlow with free-jet size application follows the single-tier pre-dryer section. There will be no thermal deflection

due to the CRP beam design. Better operational efficiency with easy and quick exchange of the metering rods. The web run includes an Airturn system.

The new EcoCal Delta hard nip calender is designed such that it could be converted into an EcoSoft Delta soft nip calender at any time. The new calender will be equipped with a 32-zone Nipcorect roll for individually zone-controlled loading to achieve a perfect CD-profile. The Flexitherm roll is laid out for a future operation with thermo oil and a surface temperature of 150 °C.

A MasterReel provides best winding quality when winding up the paper. The linear load will be sensed directly via the load cell at the reel drum. This leads to a consequent separation of the linear-load generation and measurement and thus to a reproducible roll hardness structure without being influenced by disturbances in the loading system. The maximum winding diameter of the new MasterReel is 3,350 mm.

The contact less paper tail pick-up from the last pre-dryer to the SpeedFlow and from the last after dryer through the calender and reel is achieved with the proven Fibron vacuum technology and

high-pressure WaterJet tail cutter ensuring an optimal tail transfer process.

The order includes the hood and the air systems, steam & condensate system, mechanical drive, lubrication system as well as the C&I system for the paper machine.

Voith Paper will deliver the basic process engineering and supervise disassembly, pre-assembly and the main erection work. Voith is also responsible for start-up and training.

As a result of this extensive conversion of the paper machine, certain adaptation work is required in the stock preparation system, including appropriate basic engineering for the process and control and instrumentation.

In this connection, the ModuleJet dilution water supply system for the new headbox will be equipped with a VoithVac deaeration and a MultiScreen screening system. In addition, a total of five broke pulpers and two broke conveyors will be installed.

For the conversion of the paper machine, Merebank also relies on the process knowledge and application competence of Voith Paper Automation. In the future,

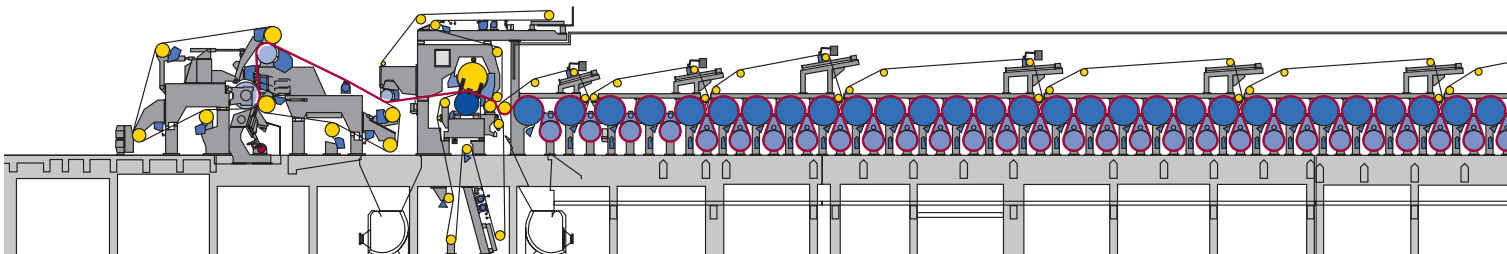


Fig. 1: The "Hand shake" between Casper Nice, Mondi Fine Paper South Africa, on the left and Andreas Endters, right.

Fig. 2: The teams of Mondi and Voith after order placement.

Fig. 3: PM 31 schematic.



the proven Profilmatic M system will control the cross profile at the headbox.

Voith Paper Automation also deliver FeltView, an innovation for the exact on-line supervision of the permeability, temperature and moisture of the used felts.

The EnviroScan will be used for the optimization of the press section and for the moisture CD profile control. It operates precisely and reliably under extreme conditions such as heat, dirt and high ambient moisture. With its integrated moisture-measuring head and a web-temperature measuring unit, it allows to eliminate process errors early on.

The existing paper machine will be shut down in May 2005, and the new machine will be started up in August 2005.

As a partner with process and service competence, Voith Paper has gained recognition by the South African paper industry. Interesting and demanding orders from this market area are the proof of this. We are particularly happy that we could also convince Merebank Paper Mill of our competence and that Voith was awarded with the PM 31 order.

The technical concept for the wet section and the dry section proposed by Voith Paper and the newly-developed Single

NipcoFlex press, which will be the state-of-the-art and trend-setting press concept for copy papers, were also decisive for this decision.

Mondi Fine Paper has the intention to perform some additional modifications of this line in the following months. They plan a new preparation line for eucalyptus, the extension of the existing vacuum system and a new slitter/winder. We will offer our confidential partnership for these projects as well.

