

STRACEL: A MODERN EUROPEAN MILL IN FRANCE

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FINNISH-OWNED MILL COMPLEX SUPPLIES PULP AND NEWSPRINT FROM THE HEART OF EUROPE.

THE OUTSKIRTS OF STRASBOURG, IN THE ALSATIAN region of what is now France and at other times has been part of Germany, is a fitting location for a truly European pulp and paper mill.

For centuries, the Rhine River has linked the area to other commercial centers. Highways, railroads, and air transport have expanded the reach of local industries. Within a 500-km radius lie some of the continent's major cities—Paris, Brussels, Amsterdam, Frankfurt, Munich, Zurich, Milan, Lyon.

It's also fitting that a newsprint mill is located in the city where Johannes Gutenberg developed his printing process.

The Stracel mill operations actually date back to 1937, when Cellulose de Strasbourg built a sulfite pulp mill along the Rhine River. Stracel's newsprint mill and 850 metric tons/day thermomechanical pulp (TMP) plant were built on a greenfield site after Finland's UPM-Kymmene acquired the operations in 1988. The new complex, built by the same project team that had worked on Jämsänkoski's PM 5 and other Finnish paper mills began operations on Oct. 25, 1990. The company continues to operate a nonintegrated 140,000 tons/year bisulphite pulp mill nearby.

The newsprint mill has an annual capacity of 240,000 metric tons. It is one of the most efficient and productive newsprint mills in the world, according to Jaakko Sarantola, director for the newsprint operations at Stracel.

Most of the people working at the mill are Alsatians, with a few Finns assigned to the 50-person administrative

staff. The pulp mill employs 150 people. Another 150 work at the paper mill and 165 people work in maintenance. The mill workers were selected from about 3000 applicants and went through extensive training before startup.

Sarantola estimates the annual demand for newsprint within the 500-km radius of the mill at 3 million metric tons. The French use upwards of 800,000 metric tons of newsprint each year. Most of Stracel's customers are located in eastern France, southwestern Germany, Belgium, Switzerland, and northern Italy, with some newsprint also going to the Catalonia region of Spain.

The local forest industry is tailored toward the sawmill market rather than the pulp and paper industry, Sarantola noted. Before UPM acquired the Stracel pulp mill in 1988, the mill was owned by the local sawmill owners' association. The sawmill owners have retained a marginal



Strasbourg

share interest in the mill.

The pulp mill uses as much as 80% purchased sawmill chips—primarily spruce—for its TMP process. The rest is roundwood. About half the chips come from German sawmills in the Black Forest, half from French sawmills in the Vosges. Capacity is 850 metric tons/day.

Stracel claims a 95–96% yield from its TMP process. For brightening, the mill uses dithionite (sodium hydrosulfite: $\text{Na}_2\text{S}_2\text{O}_4$). Both elemental chlorine-free and totally chlorine-free, chemical market pulps are produced at the bisulphite pulp mill, using oxygen, hydrogen peroxide, and chlorine dioxide for bleaching.

FRANCE



Bales of pulp and a view of the mill



A typical sawmill in Germany's Black Forest



Loading spruce chips



Siemens drives and Sunds refiners

Although the mill has no capacity for deinking, that will likely be added at some undetermined point in the future, Sarantola said. Slot screening was being added as part of a rebuild of the TMP mill. That will allow a better distribution of fiber sizes within the pulp, he noted.

Stracel's Valmet paper machine has a design speed of 1500 m/min, trimming at 866 cm. It is equipped with a Speed-Former HS in the wire section and a Sym-Press II plus fourth press in the press section. The newsprint is machine calendered and can be wound in reels up to 1500 mm in diameter and 3100 mm wide.

An ABB/Accuray system is used for process control and Sensodec equipment provides continuous paper machine condition monitoring.

UPM operates one other newsprint mill in France, the 300,000 metric tons/year Chapell Darblay mill at Grand Couronne. The company also owns the 220,000 metric tons/year magazine paper mill at St. Etienne du Rouvray and the 100,000 metric tons/year fine paper mill at Docelles, southwest of Strasbourg.

Stracel is a proponent of lower grammages for newsprint. About 40% of the newsprint produced at the mill is in the 40–42 g/m² range. A quarter century ago, the

standard newsprint in Europe was 52 g/m², Sarantola explained. A German standard of 48.8 g/m² was developed around 1975 and now serves as the upper range, with 45 g/m² dominating.

Because of the emphasis on recycling, especially in Germany, the move toward lighter-weight newsprint has slowed a bit, Sarantola said. In France, however, the lighter grades account for about half the newsprint consumption. The use of 100% TMP allows Stracel to maintain stiffness while producing a lighter weight paper, he said.

A POSITIVE ENVIRONMENTAL ATTITUDE

Stracel pumps about 16 million m³ of water per year. About half of that comes from underground; the other half is drawn from the Rhine. Between 1985 and 1995, the mill reduced its water consumption by 22.5%. In 1995, the paper machine used 9300 m³/day of water, on average, and pulping used 37,200 m³/day of water. The paper mill uses less than 15 L of fresh water per 1 kg of newsprint it produces. The newsprint is 100% chlorine free.



The Valmet machine and dryers

The mill complex uses a biological effluent treatment system. The paper mill's biological oxygen demand (BOD) after treatment is less than 1g/kg of paper produced. Chemical oxygen demand is less than 3g/kg of paper. The water is cooled to 30° C and neutralized to pH 6. Sludge from the process is dried and used as fuel. Of the 825,000 MWh of electricity the mill uses annually, it generates about 12% on site.



Jaakko Sarantola with samples of newspapers printed on Stracel papers

Stracel's overall environmental efforts earned it special recognition from APAVE, the French technical inspection center. The group awarded its 1991 first prize for environmental protection to Stracel.

The mill also became ISO 9002 certified in 1994. **TJ**

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NORSKE SKOG'S GOLBEY PAPER MILL TO ADD SECOND PAPER MACHINE

KARL GURRANDSRUD

The Board of Norske Skog has approved a plan to add a second paper machine to the Group's newsprint mill at Golbey, France, increasing the mill's annual capacity by 330,000 metric tons. This will give Norske Skog Golbey a total capacity of 600,000 metric tons per year.

The investment amounts to NOK 2.8 billion (US\$ 395.6 million), minus investment grants, which is about 30% lower per metric ton than the first paper machine. The project will be financed from cash flow and existing credits, so that Norske Skog will continue to enjoy a satisfactory financial position.

The expansion was included in the plans for the Golbey mill, located southwest of Strasbourg, when production started in 1992. The mill is centrally located to Norske Skog's main markets—close to customers and

suppliers of recovered paper and wood.

Start up of the new paper machine is scheduled for the first quarter of 1999. When it is in full operation, 60%–85% of the mill's raw material will consist of recovered paper. Norske Skog Golbey is noted for efficient use of resources and low discharges. An operating permit is expected to be granted during the summer.

Ranked as the third largest supplier of newsprint in Europe—the main market for the new machine—Norske Skog currently claims 15% of the European market from mills in Norway, Austria and France.

The new paper machine will boost production capacity for newsprint in

Europe by about 3%. Newsprint consumption in western Europe currently amounts to around 9 million metric tons/year, and is expected to increase by about 2% annually. At the moment, growth in newsprint production capacity is very low in Europe and North America.

The sale of additional tonnage from the new paper machine will be coordinated with continued upgrading of standard newsprint to more improved grades at Norske Skog's Follum and Union mills in Norway.

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