

SUPPLIERS INVESTING IN PILOT COATER FACILITIES

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CUSTOMERS BENEFIT FROM PILOT PLANTS IN CANADA, THE UNITED STATES, AND EUROPE.

COATED PAPER IS BIG BUSINESS, BOTH FOR THE companies that make it and for the companies that supply the raw materials and technology to the paper mills.

It is also a competitive business. New formulations and new methods to apply coatings to paper can give one product a slight advantage in the market place. Finding that advantage is often a cooperative effort between suppliers and papermakers. The initial proof and later refinements of their efforts is usually through trials on pilot machines.

Two suppliers who are banking heavily on pilot coater facilities are the Centre International de Couchage C.I.C., Inc. (CIC) and the Emulsion Polymers business of The Dow Chemical Company.

CIC

Early this year, inauguration ceremonies were held in Trois-Rivieres, QC, for CIC. The pilot coating facility was built as a joint venture by J.M. Huber Corp., Mitech Canada, and Groupe Laperriere & Verreault, Inc. (GL&V).

The 32,700 sq. ft. test center was built by HMI Construction. Total cost was CAD 31.7 million (US\$ 21.7 million), including a repayable contribution of CAD 6 million (US\$ 4.1 million) from the governments of Canada and Quebec.

Mineral Technologies Inc., J.M. Huber, and several large paper companies have already reserved 30 weeks of annual use over a period of 10 years.

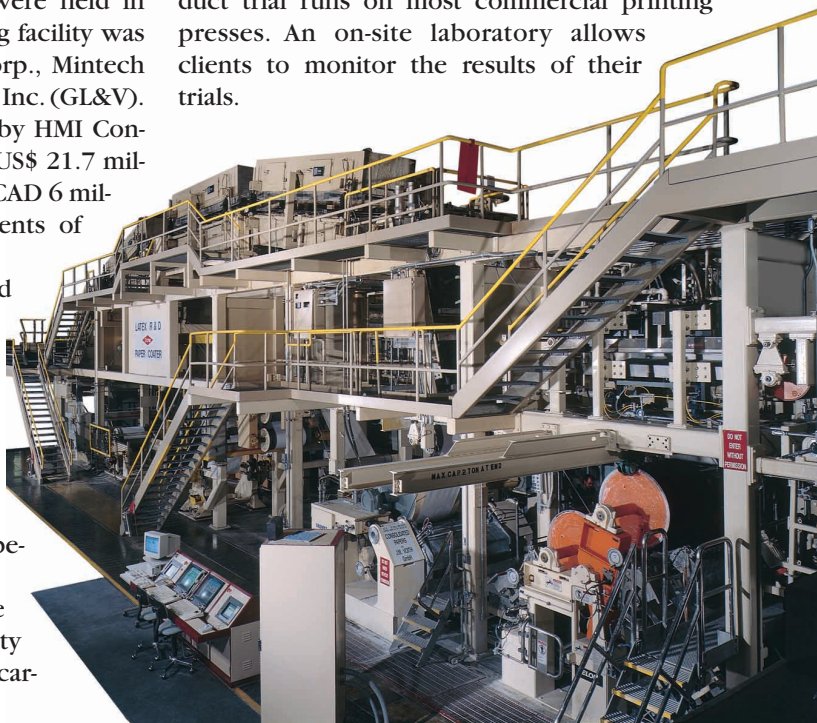
"The CIC offers us high level support for the development of innovative coating products to meet our clients' increasingly sophisticated needs in the pulp and paper sector," said Paul Saueracker, president of Specialty Minerals Inc., the Minerals Technology subsidiary responsible for managing the project. The company plans to use the facility "to carry out major precipitated calcium car-

bonate development programs for coated paper, which in turn will enable us to expand our international position," Saueracker said.

Much of the equipment installed at the pilot center was supplied by Valmet/Raisio. It includes an OptiConcept coating station allowing for jet and blade coating, an online OptiSizer, and an online, two-nip Optisoft calender. GL&V supplied the rewinder and an off-line, 11-nip supercalender. Both infrared and air dryers are installed on the pilot machine, which is balanced to run at about 9850 ft/min (3000 m/min).

The design for the CIC facility was developed with input from the participating companies, as well as customers, the machine suppliers, and the builders. Trials are conducted in strictest confidentiality.

The facility handles wider rolls than most other pilot plants—30 in.—making it easier for customers to conduct trial runs on most commercial printing presses. An on-site laboratory allows clients to monitor the results of their trials.



DOW

Dow's Emulsion Polymers business is investing several million dollars in its two pilot coater facilities located in Midland, MI, and Horgen, Switzerland. This investment is part of an on going program to assure the pilot coaters remain state-of-the-art.

"Our continued investment in these two pilot coater facilities helps ensure that we continue to develop new products and services our customers value," said Ted Cosse, global business vice president for Dow Emulsion Polymers. "Our customers are not satisfied with merely staying current with existing technology. They expect Dow... to help them stay on the leading edge of paper coating technology," he said.

Since the Midland facility was commissioned in 1988, Dow has invested an average of US\$ 1 million per year to equip the facility with the technology that is used in leading edge coated paper mills.

In 1999, Dow installed a unique Beloit quad coater. "In keeping up with the advancements of coating application methods, we wanted the ability to run formulations by jet, short dwell, flooded nip, or bent blade applications using a common backing roll and web path. This would afford us the ability to test papers produced with these different coater application devices utilizing the exact same drying and processing conditions," said Andy Hickman, manager of the pilot coater in Midland. "The simplicity of changing from one application device to another, in a time frame of about two hours, allows us the opportunity to study these systems quickly, often within a one- to two-day time span."

During the past five years, Dow also has added an improved process control system, moisture and coat weight gauging system, a pre-metered size press, and an air knife to the facility.

A production-scale on-line hot/soft calender is scheduled for start-up in the summer of 2000. This machine has full induction heated steel rolls, a steel and soft roll temperature monitoring system, a maximum running speed of 6000 feet/min, and a maximum operating temperature of 480°F. The company also plans to invest in a new multi-nip supercalender within the next two years.

EUROPEAN INVESTMENTS

At the facility in Horgen, Switzerland, a new film coater will be installed this winter.

"In Europe, there is a heavy shift toward high-speed coatings in general, with a special focus on high-speed, on-line film coating. To stay competitive, our customers must incorporate high speed into their coating facilities," said Robert Urscheler, manager of the pilot coater in Horgen. "To simulate this speed, we're installing the same machinery that our customers are using or plan to use."

Like the Midland facility, the key to the success of the pilot coater program is capital investment. On average, Dow invests more than US\$1 million per year to upgrade this facility. In fact, Dow recently spent US\$ 3 million on a pilot coater modernization program. During this time, Dow installed a totally new process control, larger diameter backing rolls, new high-efficiency IR dryers, and a hot/soft nip calendar, and set a new world speed record for coating paper, 3259 m/min. In 2001, the company plans to add a new multi-nip calendar to the facility.

"The mission of the Dow pilot coater team is to safely provide quality trials for our customers, using the very latest latex, coating and finishing technology," Hickman said. As a leader in latex production and latex development technology, "we have the experience and expertise to work with customers to make the best possible paper products," he said.

Using the pilot coaters, Dow helps customers develop new paper coatings that meet their performance requirements; minimize the risk of purchasing new machinery by testing its runability at start-up and scale-up; and test additives, latexes, and pigments to see if the coating formulation is runnable on their machine.

"The key to the use of a pilot coater facility is testing in real time, with real material, on real machines," Urscheler noted.

Customers come to suppliers for troubleshooting as well. The pilot coater facilities can simulate the customer's exact processing conditions and identify problems without the customer having any additional downtime. In addition, pilot facilities allow papermakers to conduct trials and work out potential start-up problems before their own machinery is functional.

A GLOBAL PARTNER

There are distinct benefits to having pilot coaters on two continents, Dow believes. For one, it shows the company's great commitment to the globalization of the paper industry.

The company considers logistics to be a primary advantage of having pilot coaters in Midland and Horgen. Serving the more local markets not only saves time and shipping cost, but also allows quick response. And, having two coaters, Dow employees in both regions can share information and methods, and also consult on relevant issues.

Material considerations are also a factor. "The markets for Europe and the United States use a combination of different materials, which affects the processing," Urscheler explained. "The pilot coater facility must be equipped to handle the different requirements of these geographies." **TJ**

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