



ABB muscle and quality for world's widest newsprint machine

Drives, imaging, control, electrification support Stora Enso's largest investment

Valued at \$500 million, Stora Enso's Paper Machine No. 4 (PM 4) in Langerbrugge, Belgium, represents the largest single investment in the company's corporate history. Over 31 meters wide, the massive newsprint machine boasts a design capacity of some 400,000 tons annually. To ensure an optimum blend of quality, reliability and control, Stora Enso partnered with ABB for comprehensive automation solutions.

Blending power with precision

To ensure reliable power for the new paper machine, ABB provided a complete electrification package including main switchgear, motor control switchgear, network control and monitoring, and energy reporting.

ABB engineers handled every facet of design, engineering and startup – including installation of more than 400 kilometers of cabling to link motors and drives, control systems, and some 1,000 safety switches. ABB also provided ventilation systems for the machine hall to ensure a constant fresh air supply.

ABB's drive system covers the total production line from PM 4 to the two paper winders and one re-winder. The system includes a total of 62 drive sections, controlled by ABB Industrial IT technology integrated with the main automation system for control precision, functionality and reliability in high-quality paper making.

In addition to the drives and controllers, ABB delivered all product-related services such as startup, commissioning and training.

Ensuring quality in high-speed production

The business of paper making involves dispensing a liquid “web” of wood pulp onto broad wire belts that move it through pressing and drying steps at hundreds of meters per minute. Even the smallest variation in product characteristics could be costly at these speeds.

An ABB Quality Measurement System constantly scans the moving paper for criteria such as color, thickness, opacity and moisture content, sending needed adjustments to the main control system in real time.

An ABB Web Imaging System also records the quality of every square meter of passing paper, alerting operators to the exact type and location of any defect. By automatically linking these measurements to the machine drive system and an ABB braking system, operators can quickly locate and patch even the smallest section of substandard paper among finished rolls that can weigh several tons.

Within two weeks of startup, Stora Enso’s PM 4 at Langerbrugge was able to operate for more than 48 hours without disruption and achieve production rates exceeding 800 tons per day. This successful installation is one of thousands for ABB, which holds the leading position among automation providers to the pulp and paper industries.