



A Rockwell Automation Company

Louisiana-Pacific Canada Ltd. Mat Weight Control Upgrade

The Client:

Founded in 1973 and headquartered in Portland, Oregon, LP is one of the largest building products manufacturers in North America. LP has facilities throughout the United States, Canada, Ireland and Chile. LP owns almost a million acres of timberland,

predominantly in the Southern United States, and has more than 60 manufacturing facilities in North America. Louisiana-Pacific Canada Ltd. Dawson Creek OSB is an OSB plant located in Dawson Creek, BC.

The Requirement:

As in most plants, LP was looking for opportunities to reduce their operating cost and improve the quality of their product. By adding a mat weight control system, LP could produce a more consist product and at the

same time reduce their raw material cost. The return on investment for this project was less than four months.

The Design Solution:

Currently, the filling and emptying of the forming bins is accomplished by the operator manually setting the speeds of the dry bin and forming bin bottom belts and the speed of the forming line. The new mat weight control system would fully automate this process. Hinz had completed a similar project for LP at their Swan Valley OSB plant using a proprietary control technique called 'Mass flow Compensated Control'. The success of this project was one of the main reasons for selecting Hinz to provide the control engineering required for this project.

The goal was to have less than a two percent deviation in the weight of the mats. In order to achieve this goal, the existing control system needed to be upgraded.

Ultrasonic sensors were added to the forming bins to provide a continuous reading of the forming bin levels. The PLC uses this information to control the speed of the dry bin bottom belts in order to maintain a constant level in the forming bins. This has traditionally been a very difficult parameter to maintain because of the large transport delays inherent to this type of process. A PID control loop is inadequate in these situations because the gains must be set so low to prevent system instability that it is also incapable of responding to changes in demand. The Mass Flow Compensated Control Strategy developed by Hinz engineers is able to provide instant response to changes in demand and

still maintain system stability.

The existing forming line moisture meters were connected to the mat weight control system. By measuring the moisture of the strands, the control system was able to automatically compensate for the moisture content of the strands in the mat weight calculations. The existing forming bin bottom belts, dry bin bottom belts, and forming line drives were upgraded to be able to communicate to the PLC system via the Modbus Plus communication network. This allowed for more accurate control of the speed of these drives.

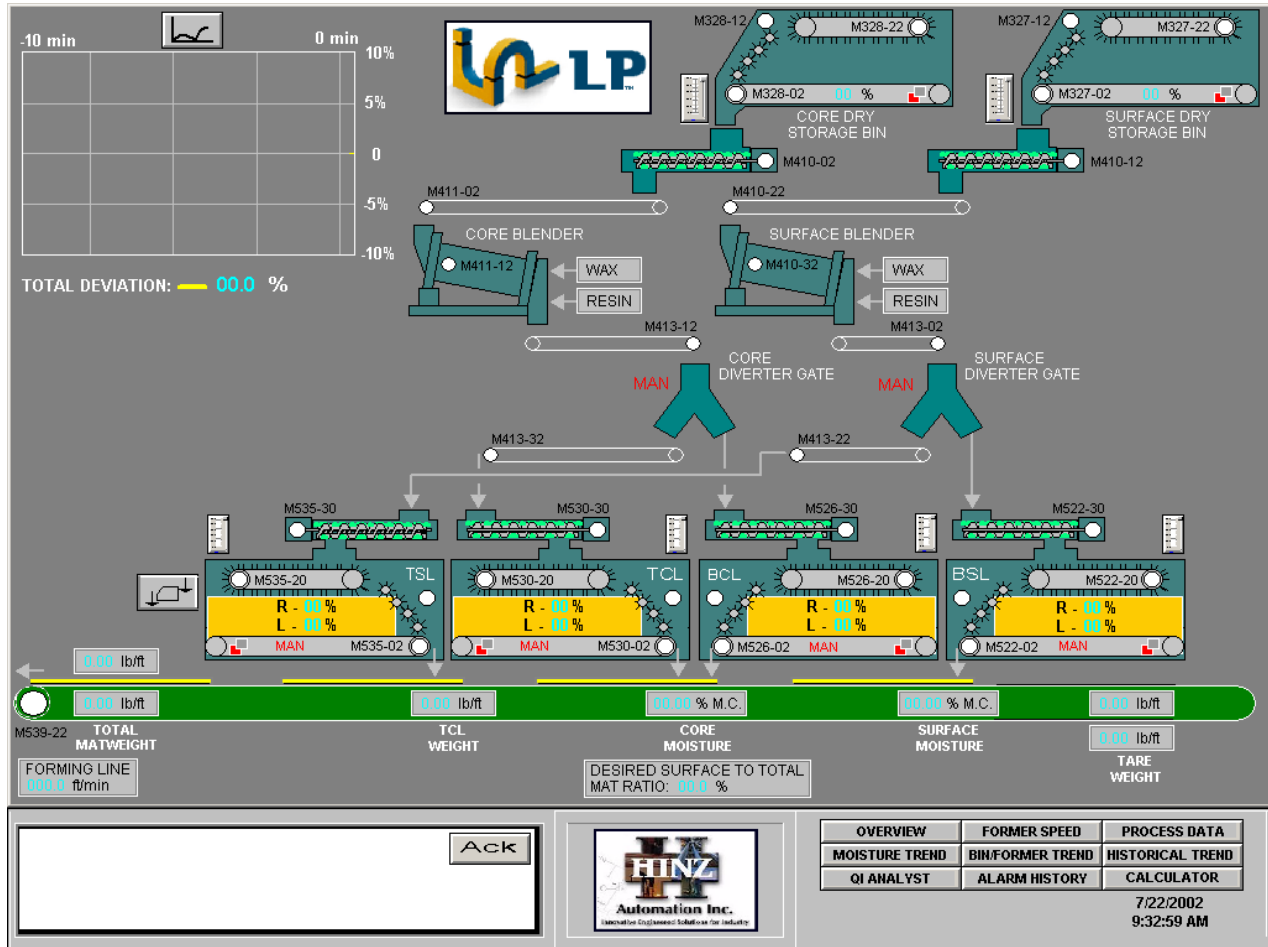
A tare and total mat weight scale were already in place. A third mat weight scale was added to the forming line. The new mat weight scale was installed between the top surface layer and the top core layer forming bins. The information from the new mat weight scale allowed the control system to more accurately regulate the mat weight and specifically the amount of material going to the core layers.

In order to minimize the learning time, Hinz provided on-site training to both the operators and maintenance personnel.



A Rockwell Automation Company

Louisiana-Pacific Canada Ltd. Mat Weight Control Upgrade



System Specifications:

- Quantum PLC System
- Wonderware HMI System
- Milltronics AirRanger XPL Plus c/w Modbus plus Communication Card
- 2 Moisture Meters
- 3 Mat Weight Scales c/w Modbus plus Communication Card
- 2 Weight Belts
- 4 Former Bed Bottom DC Drives c/w Modbus plus Communication Cards
- 1 Forming Line DC Drive c/w Mod Plus Communications Cards
- 2 Dry Bin Bottom AC Drives c/w Mod Plus Communication Cards

For further information or to contact a Hinz office near you, please check our website at:

www.hinz.com