

Conveyor Case Study #4

Conveyors to handle very long wood parts through specialized paint and finishing process

GemThane is a Canadian based manufacturer of pre-finished, low maintenance wood siding. GemThane's revolutionary polymer coating process has made this company a leader in producing wood siding and wood deck and dock products that stand above their competitors in terms of durability and overall performance.



The Challenge

When GemThane contacted PACLINE, they were looking to replace their existing conveyor system with a more robust system that could more efficiently handle the transportation of 16 foot long wood siding and deck boards through the paint and curing processes.

The new conveyor system would be required to:

- Carry up to 6 pieces of 16 foot wood boards and tilt them 30 degrees to either side for painting.
- Manage the long boards around the curves in the system and through two paint booths and ovens.
- Include a touch screen control system.

The Solution

The conveyor solution for GemThane was the PAC-MAX™ heavy duty enclosed track conveyor. This conveyor has the capacity to handle the heavy loads. In addition, the enclosed track feature was important to help keep the system clean through the wet spray paint process and minimize overall maintenance costs.

Selecting the conveyor was the easy part of the solution.

As with many conveyor systems, the real challenge is often in the overall system design and the customized components required to handle the particular part being conveyed.

In this case, the final conveyor system consisted of a single looped track, with 8 highly customized carriers, each 20 feet long. These PACLINE designed carriers included a sophisticated tilting and locking mechanism for the wood boards. They also included custom light-weight covers to fully protect the tilting/locking mechanisms from paint.

Special guides were incorporated into the carrier system to prevent the large frames from swaying and to help move them smoothly in and out of the paint booth. Due to the extreme length of the parts (wood boards) and the carriers, PACLINE incorporated a “bar trolley” mechanism into the carriers, which allowed half of the carrier attachments to float horizontally. This allowed the 20’ long carriers to move smoothly around horizontal turns without causing chain jams.

In terms of controls, PACLINE provided a touch screen (human interface) control system with proximity sensors and a custom interface for stops and starts. The system was programmed with a maintenance mode, lubrication mode, auto and manual run modes and a system status check as well as fault alarms. In addition, the controls included logic to interlock the customer’s paint spray guns with the paint booth ventilation fans. This increased safety by preventing the spray guns from turning on if the paint booth fans were turned off. This feature could be manually overridden with a password.

At PACLINE’s test facility in Mississauga, the complete system including the custom carriers and control interface were fully tested prior to shipping to ensure the system would run flawlessly once installed on site.



The Results

The PACLINE conveyor improved productivity and efficiency. The new system provided greater product throughput due to the capabilities of the robust PAC-MAX™ conveyor as well as the increased capacity of the carriers to handle heavier loads. In addition, the enclosed track design of the conveyor ensured a much cleaner system which resulted in less maintenance and downtime.