

'Lean' Manufacturing Improves Performance Fibers' Competitiveness in North America

BY KEN NORBERG, EDITOR



Performance Fibers packs out about 8,000 packages a day using an automated system with robots working in two cells at its Moncure plant in New Hill, North Carolina.

When Performance Fibers began its journey with lean manufacturing in 2004, one of the first opportunities it saw to reduce inventory, save time and improve customer service came knocking at the back door of its North Carolina plant.

Looking at how it could better deliver its industrial fibers to major tire customers around the world, the company conducted a week-long Kaizen event, bringing together employees, managers and lean manufacturing experts to improve this process.

Before Kaizen, the company shipped packaged products from its Moncure, North Carolina (New Hill, NC) plant to

an off-site warehouse for storage. Then it would ship only one product type at a time, requiring the company to hold inventory until the container was full.

As a result of the Kaizen event, Performance Fibers now ships a mix of products at the same time, based on customers' needs. The products are shipped directly from its plant, cutting out multiple handling and eliminating a full day in the cycle time.

"Bridgestone/Firestone loved the idea," said Paula Dube, continuous improvement leader for Performance Fibers, the Virginia-based maker of high-performance industrial fibers and related materials.

This change has improved the order

flow with customers and brought many other benefits, such as storing products on site in North Carolina. The company also has reduced its inventory by 1.5 million pounds, and it has helped its customers reduce their own inventory using Sales, Operations and Inventory Planning (SOIP).

COMPETING GLOBALLY

In today's global marketplace, all industries are facing an increasingly competitive environment. By using Kaizen, lean Sigma and other methods to improve the automation and efficiencies of its US plants, companies like Performance Fibers are thriving by better serving their customers.

As the only industrial fibers supplier with operations in North America, Europe and Asia, these manufacturing advances give customers the benefits of shorter, faster supply and distribution, as well as the peace of mind of knowing that if demand surges, supply will be available.

“Our lean Sigma operations provide reduced cycle time and a quicker customer response, allowing us to compete effectively in North America,” said Fred Indermaur, vice president of operations and Six Sigma for Performance Fibers.

The approach that Performance Fibers is taking with its North American operations combines lean manufacturing, which aims to reduce costs and waste in a process to optimize flow, with Six Sigma, a rigorous, focused and highly effective implementation of proven quality principles and techniques.

IMPROVEMENT WITH KAIZEN

At least once a month, a Kaizen event is taking place at Performance Fibers’ Moncure plant aimed at improving productivity, reducing inventory or creating a better manufacturing flow.

On Mondays of the scheduled event, about a dozen people who have a stake in the process gather for training to learn new techniques and tools that will enable them to reach their goals.

Throughout the rest of the week, the participants will review a process, then brainstorm and implement solutions to make it better, run trials and continue to monitor improvement. The successful event ends with a presentation to the company’s leadership team followed by

rewards and recognition for the team.

Performance Fibers improved the flow in its quality testing labs using this process. Instead of having five operators all vying for the same equipment to test products, the company has reorganized the equipment in the lab so operators work together in cells. These changes have increased productivity 20 percent and eliminated excess motion by operators, Ms. Dube said.

Over the past year, Performance Fibers has conducted 19 events for a total of 72 days, involving more than 100 salaried and hourly employees and contractors. “Our goal is to involve all our North American employees in Kaizen events,” Ms. Dube said.

AUTOMATION ADVANCES

The industry trend toward shipping heavier packages of yarn led Performance Fibers to look at safer and more efficient packaging methods about a year ago.

Working with a European firm to customize the robotic equipment to meet its needs, the company now packs out about 8,000 packages a day using an automated system with robots working in two cells.

The pack-out automation has resulted in a 55 percent productivity gain as well as improved workplace ergonomics and quality because the yarn isn’t handled as frequently.

SHARING BEST PRACTICES

With the recent addition of two new plants in Winfield and Scottsboro, Alabama, through its acquisition in August of Diolen Industrial Fibers in North America, the company is quickly moving ahead



Fred Indermaur, vice president of operations and Six Sigma for Performance Fibers.

with sharing its best practices across the North American operations.

“The North Carolina and Alabama plants offer different manufacturing technologies and a wealth of historical knowledge that the company can learn from,” said Octavio Soares Neto, technology manager for Performance Fibers.

Already, the plants have helped each other solve problems and there is a drive underway to integrate the systems. This will benefit Performance Fibers and, ultimately, its customers.

“Any company that wants to survive has to be leaner and stronger,” Mr. Neto said. “Customers will get the best of both worlds. They will get additional flexibility and an improved product portfolio with our combined capabilities.”

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