

PROSPERITY TEXTILES: CHEMICALS MANAGEMENT, WATER USE, & WASTEWATER

Prosperity Textiles Improves Sustainability Performance with Chemicals Management, Wastewater, and Water Use Projects in China

USE CASE

“Sustainability is a must-have, or even a do-or-die scenario. Not marketing, not PR, not propaganda, and not for the future. It is now.”



ANDY ZHONG
MARKETING DIRECTOR

Intersecting projects produce more sustainable denim at a leading facility in China

Sustainable Apparel Coalition manufacturer member Prosperity Textiles operates a large facility in Shaoguan, China that specializes in denim dyeing and finishing. The past four years, the company has used the [Higg Facility Environmental Module](#) (Higg FEM) to monitor progress across seven critical environmental impact areas.



“Sustainability is a must-have, or even a do-or-die scenario,” says Prosperity Textiles Marketing Director Andy Zhong. “It’s not marketing, not PR, not propaganda, and not for the future. It is now.”

Prosperity uses the Higg Index to assess progress of its environmental performance, including the company’s reduction of water use resulting from its water recycling programs.

Zhong reports that Prosperity Textiles used Higg FEM to view the results of its wastewater projects, determining that critical metrics were significantly better at the facility than those set by Chinese national standards.

“The Higg Index is focusing on getting the metrics right,” says Zhong. “Without measurement, there is no improvement. First things first, we must be able to tell how we are doing and where we stand.”

Evaluating and sharing progress may be especially useful when individual projects improve multiple environmental impact areas. Higg FEM allows customers to see performance results across many impact areas within a single platform — Higg.org. Over the past few years, Prosperity Textiles has implemented projects in chemicals, wastewater, and water use with improvements across various impact areas.



Managing Chemicals in Color

In 2017, the Prosperity Textiles facility in Shaoguan implemented a new, centralized system for dye preparation and transportation. Engineers enter dye formulas into a computer and dyes are automatically weighed, mixed and delivered. Zhong likens the process to a kitchen, “if you can’t mix the right amount of salt and pepper every time, you won’t always be lucky enough to get a taste you like.”

Zhong sees chemicals management as one of the more challenging environmental impact areas. “There are many chemicals used in denim fabric production, and unlike water, [they are difficult] to recycle, or to find more sustainable alternatives for, in terms of cost and scale,” he said.

With its new dye system, the facility in Shaoguan can measure and compare chemical use in the development of various indigo formulas. This has led to improved quality control and a reduction in fabric waste previously caused by human error. In the first half of 2018, a self-assessment indicated that Prosperity Textiles was able to use 6.5 percent less indigo dye while achieving eight percent higher color accuracy. The reduction of error also resulted in 17 percent less water use. The company is focused on setting a chemical baseline with the system and will be able to compare its 2017 performance with 2018 results.

The comparison will allow Prosperity Textiles to understand the quantity of chemicals that can be saved with the system, reducing environmental impact, and creating financial savings. Zhong also points out that the automation means the company is able to maintain the same color quality at a new facility that does not have the benefit of employees with long institutional knowledge, like its new denim fabric mill in Vietnam.



 **Reusing Caustic Soda**

With the support of a third-party provider, Prosperity Textiles facility recently implemented a caustic soda recovery plant. The manufacturer uses high concentrations of caustic soda during mercerization, a process that alters fabric characteristics, allowing the fiber to absorb more water and dye and to increase its strength and luster. The recovery process collects, filters, and re-concentrates the caustic waste, allowing the facility to reuse the chemical.



Prosperity Textiles reports the system had recycled more than 2,100 tons of caustic soda in 2018. By discharging less caustic soda, Prosperity Textiles has reduced the pH in its wastewater, requiring less sulfuric acid used to neutralize, and it has reduced wastewater discharge – all environmental benefits.

 **Water Reduction in a High-Risk Region**

Prosperity Textiles has used Higg FEM to assess its water use and implement practices to better reduce water use and recycle water. Zhong says that finding efficient ways to manage water use and make reductions is important to Prosperity Textiles and its commitment to manufacturing more sustainable denim.

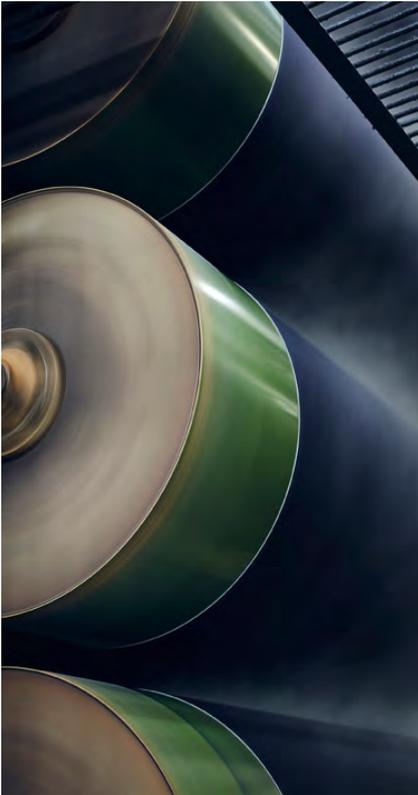
The Higg FEM assesses the individual needs and specific environmental impacts of facilities around the world. Facilities that are heavy water users or located in high-water risk areas, for example, must respond more rigorous water management questions.

In 2014, the Prosperity Textiles team installed a recycling device designed to collect the condensation of water accumulated on dryers during finishing processes. Prior to the installation, 240 tons of water heated to 98 degrees Celsius per day were released for wastewater treatment. The recycling project diverted this water for reuse in production and reheating the boiler. The facility’s self-assessment shows it now saves nearly 80 thousand tons of water and 1,500 tons of coal per year. It has also reduced its wastewater output.

 **Using Higg to Monitor Multiple Efforts**

Over the next three years, Prosperity Textiles will be able to determine the impacts of its chemicals automation system on waste, the caustic soda recycling system on wastewater, and the hot water recycling impacts on energy. With Higg FEM, the company can monitor the effects of each project’s primary impact area and its overlapping impacts.

“The Higg Index is helping us to identify the exact saving results of our impacts,” Zhong said. “By using the Higg Index, and with more peers joining forces, we can do better benchmarking to keep improving continuously.”



 **Business Value**

When pursuing a new project, the sustainability and facility teams at Prosperity Textiles create a plan to assess the return on investment they can expect. Then, they set up a trial run. First, they run a small test, collect data, and compare savings for both financial and environmental impact. “Nothing beats the actual savings, environmentally and financially, when you are promoting the project to senior leadership,” Zhong says.

To make sustainability more relatable and manageable, Zhong recommends that companies think of sustainability as a long-term investment. There may be short-term gains and losses. But the real difference will be seen in the long run. While getting started, Zhong encourages Higg Index customers to implement projects at their own facilities in partnership with key customers or supply chain partners. Being able to identify a supply chain partner that will support sustainability initiatives can help projects gain traction internally.

“The Higg Index tools have enabled us to take the first thorough assessment of our sustainable performance,” Zhong said. “We integrated Higg FEM into our sustainability management. We use our Higg FEM score as a check list to keep our sustainable practices in check. The more years you use the Higg Index, the better you know your “green” path is clear and that you can continue to follow it.”