

Finishing the hard to finish

Bringing Powder Coating In-House: How a Leading Manufacturer Built a Greener, Smarter Finishing Line

The Challenge

A growing U.S.-based manufacturer of smart storage solutions set out to bring powder coating in-house as part of a facility expansion. Their goal wasn't just operational control—they wanted to raise the industry bar with a high-performance, environmentally sustainable finishing line. With no prior in-house powder operations, they needed expert guidance from a chemistry partner who could help design, implement, and support a new line from the ground up.

The Approach

Hubbard-Hall, in collaboration with finishing supplier PSI, partnered with the manufacturer from day one to bring their vision to life. After an in-depth site review and process planning, the technical teams recommended a zirconium-based pretreatment system—a phosphate-free, environmentally responsible solution known for producing durable, high-quality finishes with lower water and energy usage.

Because the operation was starting from scratch, the project required full-spectrum support. Hubbard-Hall provided lab-based testing to validate part performance, including salt spray and compatibility assessments. Working closely with PSI's local field service team, they helped modify the plant's setup to accommodate pretreatment needs—adjusting tank configurations, aeration, and system flow.

Executive Summary

With Hubbard-Hall's expertise and support, the manufacturer launched a cutting-edge powder coating operation that elevated quality, improved sustainability, and strengthened supply chain control.

- Installed a zirconium-based, phosphate-free pretreatment system
- Replaced outsourced finishing with an efficient, in-house solution
- Reduced water discharge and improved environmental compliance
- Enabled LEED credit opportunities with a fully green process

As the line came online, Hubbard-Hall provided ongoing tank-side service, startup support, and classroom-style training for operators to understand the relationship between chemistry and coating performance. They also helped implement real-time process monitoring protocols to reduce waste and maintain consistency.

Throughout the project, both teams emphasized responsive communication and transparency. This partnership approach ensured that any challenges—from process hiccups to environmental tuning—were addressed quickly and collaboratively.

The Outcome

Today, the manufacturer operates a fully in-house powder coating system that's efficient, reliable, and environmentally forward-thinking. The zirconium-based pretreatment has become a major differentiator in their production process, enabling them to meet green building standards and cater to sustainability-conscious clients in the architectural and industrial sectors.

By eliminating outsourced finishing, they've reduced turnaround time, improved finish consistency, and gained greater control over quality assurance. The line not only meets rigorous industry demands but also positions the company as a leader in clean manufacturing practices.

Moreover, the manufacturer's decision to use phosphate-free chemistry supports LEED credit opportunities and reduces the environmental footprint of their entire production workflow. The investment has paid off—operationally, environmentally, and reputationally.

> "We didn't just want to bring finishing in-house—we wanted to do it better, cleaner, and smarter. Hubbard-Hall helped us build a system that not only met our performance goals but aligned with our commitment to sustainability."
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> **Director of Operations, U.S. Manufacturing Facility**

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